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Armour Purchases Nitrogen Facility

Plans Call for Expansion Of 240-Ton-Per-Day Plant

CHICAGO—Armour & Co. has purchased the nitrogen plant of Mississippi River Fuel Corp. near Festus, Mo., according to a joint announcement. Armour expects to take over the operation of the plant on about June 30. All of the plant personnel will be required, a spokesman said.

Future plans call for expansion of the nitrogen facilities. The plant now produces anhydrous ammonia in the amount of approximately 240 tons per day, part of which is converted into nitric acid which is then processed into various ammonia and ammonium nitrate solutions and granulated ammonium nitrate. Armour expects to expand into the direct application of various nitrogen solutions.

At the same time William Wood Prince, Armour president, announced formation of the Armour Agricultural Chemical Co. as a division of Armour & Co. It will include the Armour fertilizer, nitrogen and phosphate divisions.

Announcement of the purchase follows the statement made by Mr. Prince to shareholders at the Armour annual meeting in February. He said: "We must acquire our own production of anhydrous ammonia. This will enable us to enter the growing fertilizer field of direct application and high analysis fertilizers."

W. E. Shelburne, president of the Armour Agricultural Chemical Co., said that a research and development group will be set up to investigate application of various nitrogen solutions. The Festus plant, opened in 1955, is on the Mississippi River south of St. Louis.

The Armour Agricultural Chemical Co., with headquarters in Atlanta, Ga., also operates phosphate mining and processing facilities and fertilizer mixing plants. Mr. Shelburne, a vice president of Armour & Co., has been general manager of the fertilizer division.

300 Learn What's New in Fertilizer Industry Technology at TVA Conference

By LAWRENCE A. LONG
Editor of Croplife

MUSCLE SHOALS, ALA.—Discussions on nitrogen losses, production of high-nitrogen grades and liquid fertilizers, topped off with inspection of operating pilot plants, featured a demonstration of new fertilizer technology at the Tennessee Valley Authority center here June 9-11. Fertilizer industry representatives from 33 states and a number of foreign countries were among the more than 300 persons registered for the event.

The first day's registration included management and technical personnel representing more than 150 firms in the fertilizer industry plus specialists from several state agricultural colleges and the U.S. Department of Agriculture.

A. R. Jones, member of the TVA board of directors, reviewed some of the objectives of the Authority. He indicated that one of its chief functions in the fertilizer field is to help the industry to prosper and to improve its products, and thus to lower the cost of plant food to farmers.

"Improved technology is one of the important ways through which industry in all fields lowers its costs and improves its earnings," he said. "This demonstration is meant to provide assistance to that end."

Mr. Jones added that TVA has no secrets and reminded the fertilizer representatives present that "All our patents and the results of our work are open to you without royalty."

The story of TVA's fertilizer research and development program was told by J. H. Walthall, director of the Division of Chemical Development. He reviewed some of the history of the research work done by TVA and reiterated the desire of the Authority to cooperate with industry in the solving of technical problems.

T. P. Hignett of TVA reviewed the agency's work on ammoniation and granulation, showing with slides the workings of various units developed toward this end. He said that 18 years work has been under way to

(Turn to TVA; page 17)

Greetings from NPFI Chairman

By L. DUDLEY GEORGE
Chairman of the Board
National Plant Food Institute

We are happy to have a request from Croplife to extend greetings to members and guests of the National Plant Food Institute attending the 1959 convention.

In the four years the Institute has been in existence, efforts have been made to further protect and enhance the good name of the fertilizer industry in the fields of research and education and governmental affairs. The Institute is a welcome member around any council table where agricultural leaders gather and where the welfare of farming is a concern.

It goes without saying that the work of the Institute would not be possible without the splendid financial support and cooperation which it receives from its members. These members make it possible for the Institute to maintain industry prestige and to direct proper attention to the importance of the industry's products to the national welfare. And, of course, we all have a responsibility to promote the lawful interests of the industry and to increase acceptability of fertilizer and fertilizer materials in keeping with sound farming practices.

USDA Scientist Demonstrates High Cost of Canada Thistle; Shows Control Methods

WASHINGTON—The high cost of allowing the Canada thistle to infest cropland and methods of controlling the weed in two to five years have been demonstrated by a U.S. Department of Agriculture scientist.

In experiments at Bozeman, Mont., using irrigated spring wheat as the test crop, Jesse M. Hodgson of USDA's Agricultural Research Service showed that only four Canada thistle shoots per 16 square feet reduced wheat yields 30%. Where thistle infestations averaged 50 shoots per 16 square feet, wheat yields decreased 60%.

Normal irrigated spring wheat yields were obtained when Mr. Hodgson removed the Canada thistle plants. His studies were carried on in cooperation with the Montana Agricultural Experiment Station and the U.S. Bureau of Reclamation.

In plots planted to wheat each year, Mr. Hodgson controlled the weed by annually spraying one pound of 2,4-D amine per acre 26 days after seeding. Nitrogen was applied yearly to increase ability of the wheat to compete with thistles that survived the 2,4-D sprays. In other plots, left fallow during alternate summers, he removed the thistles by cultivating every 21 days after duckfoot sweeps set at a 3- to 4-inch depth.

Twice-a-year mowing of alfalfa, and use of one pound of 2,4-D amine per acre sprayed annually on silage corn and on seeded pasture grasses controlled Canada thistles when these crops were grown in rotation with the spring wheat. The land was cultivated before planting of silage corn in late May. Nitrogen was applied in seasons when pasture grasses or silage corn were planted.

South Dakota Fertilizer Group Selects Directors, Constitution

BROOKINGS, S.D.—Election of a seven-member board of directors and the adoption of a new constitution were the main developments at an organizational meeting of the newly formed South Dakota Fertilizer Assn. at Brookings recently.

Tentative plans to organize the association were made during the ninth annual fertilizer and soil management short course at Brookings early this year. A possible constitution and other plans were made in February.

Two South Dakota State College agronomists have been serving as temporary officers. Leo Puhr, acting chairman, and Rodney Dodge, acting secretary, turned over their duties to the new officers at the close of the meeting.

Serving on the new board of directors will be four South Dakota dealer representatives and three industrial representatives. New chairman is Clarence Schladweiler, manager of Schladweiler Farm Service, Madison, who was elected for a three year dealer term. Andy Anderson, a Dakota Fertilizer Co. representative, Canton, elected for a two year industry term, is vice chairman, and Wes-

(Turn to SOUTH DAKOTA, page 20)

NPFI CONVENTION

WHITE SULPHUR SPRINGS, W. VA. — Some 1,000 persons began gathering here June 14 for the fourth annual convention of the National Plant Food Institute. The program will include updating of the institute's activities; a panel session on "Fertilization in the Future"; a talk by Rep. Jamie L. Whitten (D., Miss.) and a report of what's happening down on the farm. Richard E. Bennett, Farm Fertilizers, Inc., Omaha, president of the institute, is scheduled to open the program. A complete report of the convention will appear in the June 22 issue of Croplife.

Agrico Begins Work On Minnesota Plant

NEW YORK—Construction got under way last week on a new Agrico fertilizer plant at Sleepy Eye, Minn., the American Agricultural Chemical Co. has announced.

The plant will be built on a 64-acre site purchased recently by the company, located six miles east of Sleepy Eye. The first phase of construction is scheduled for completion next fall, according to C. M. Powell, president of the firm.

Georgia Dairyman Grows Feed for 32 Cows on 100 Acres

ATHENS, GA.—You can make what you want to out of Coastal Bermuda with fertilizer and lime, says N. C. Lee, manager of the Lakeside Dairy Farm in Candler County. Mr. Lee is a firm believer in Coastal as a basic pasture grass for dairy cows.

This 32-head dairy farm, with only 100 acres in open land, is a good example of combining the right kind of pasture and forage plants with adequate amounts of lime and fertilizer for top milk production, according to P. J. Bergeaux, agronomist of the University of Georgia Agricultural Extension Service.

For summer grazing, Mr. Lee has 32 acres of Coastal Bermuda, 12 of common Bermuda and three acres of Pensacola Bahia. He has 11 acres of Starr millet for supplemental summer grazing and he usually plants 26 acres of oats for temporary winter grazing. He has 13 acres of corn for cattle feed.

Mr. Bergeaux says that soil testing is the yardstick used for measuring lime and fertilizer needs on this dairy farm. All pasture has been limed. Coastal Bermuda is fertilized with 700 lb. of 4-12-12 and 136 lb. of nitrogen per acre. Millet receives the same amount. Oats are fertilized with 500 lb. of 4-12-12 and 132 lb. of nitrogen top dressing. The agronomist said this type management and fertilization enables Mr. Lee to provide adequate grazing and hay for his herd.

Otis Parker, county agent in Candler County, has supplied Mr. Lee with latest research findings and recommended cultural practices. He says Mr. Lee and Mrs. Eubie Riggs, owner of the farm, have been most cooperative in following recommended practices.

Heavy Rain, Heat Cause Tobacco Loss

TIFTON, GA.—Tobacco growers in the area around Tifton, and extending southward almost to Hahira in Lowndes County, have suffered a large loss in their tobacco crop due to heavy rains followed immediately by extremely hot weather.

To give some encouragement to the flopped-over plants, William H. Pool, Tift County agent, is advising farmers to plow the soil to let air to the roots of the plants as soon as the land is dry enough for turning. After this is done, he said, re-fertilization should be carried out.

Mr. Pool advised the farmers to apply about 300 lb. of 6-3-24 fertilizer 3 to 4 in. from the plants, and 3 or 4 in. deep. He said the 6-3-24 would give more potash and nitrogen than the 6-3-9 could give, and the plants are in need of these nutrients.

CUT WEEDING COSTS 50%

ST. PAUL—Chemical weed-killers can reduce weeding costs in a crop like onions by as much as 50%.

University of Minnesota horticulturists R. E. Nyland, D. C. Nelson and D. H. Dinkel make that conclusion after two years of tests.

In 1956, they found that where no chemical was used, it took 170 hours of labor per acre to hand-weed onions. But where they made a "pre-emergence" application of Telvar, a chemical herbicide, workers did the hand weeding in 70% less time. And when you add the cost of the chemical, total weeding costs were still cut in half.

State's Farmers Using More Fertilizer in '59

KNOXVILLE, TENN. — Tennessee farmers are using more lime and fertilizer this year than ever before in history. They are using over six times as much lime as they were five years ago, according to Dr. W. D. Bishop, University of Tennessee extension agronomist. In 1954, for example, less than ¼ of a million tons of lime was used. "In 1959 farmers will use close to a million and a half tons of lime," Dr. Bishop said.

"Why such a tremendous increase in such a short period of time? Because farmers are getting increased profits when lime is used according to needs. The use of lime increases yields of most crops and also produces higher quality. In fact alfalfa cannot be produced on strongly acid soils unless lime is applied.

"Are we using enough lime? The answer is no. Farmers could still use almost twice as much lime as they are using at the present time. Three million tons of lime could be used each year for the next 15 years and then it would require two million tons a year to maintain our soils at a high level.

"The largest amount of fertilizer used in Tennessee was about 525,000 tons or a little over a half million tons. We are estimating that Tennessee farmers will use an all time high of over 600,000 tons this year. This represents about a 20 to 30% increase in fertilizer use over last year.

"Even though more fertilizer is being used this year than ever before in history farmers are not using half as much fertilizer as recommended. Farmers can expect good returns from the use of fertilizer, when applied according to recommendations. Crops can be produced more efficiently when the soil is adequately treated with lime and fertilizer."

Canadian Experimenter Lists Thistle Damage

WINNIPEG—The presence of two Canada thistle plants per square yard in a wheat field cuts the grain yield by 18%. Nine thistles cause a loss of 65%, according to E. S. Molberg of the Government of Canada Experimental Farm at Regina, Sask.

The weed is hard to eradicate because its root system extends far below the cultivated zone and is capable of sustaining the plant for months even when the surface of the soil is kept bare by cultivation.

Root fragments containing buds are spread by tillage implements, a factor contributing to the increase of territory being taken over by the Canada thistle. Mr. Molberg says best control is to starve the thistle by planting competing crops.

Chemicals can be used to suppress the weeds in the crops, or as a substitute for cultivation. Application of 2,4-D or MCPA at as high a rate as the crop will tolerate is advised. This will suppress the thistle and prevent seed production. On fallow, 2,4-D applied at 16 oz. an acre will kill most of the top growth. Regrowth will occur, but repeated spraying at that rate will eventually kill many of the weeds.

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INSECT, PLANT DISEASE NOTES

Pest Outbreaks Menace Tobacco, Cotton in Georgia

QUITMAN, GA.—Adron Harden, county agent of Brooks County, warned the farmers in his area that pest infestations threaten critical damage to tobacco, cotton and peanuts.

Mr. Harden said numerous farmers have reported heavy infestations of stink bugs on tobacco. A survey of the county shows fields in every section are infested, and immediate spraying or dusting with parathion was recommended.

Spittlebug Causing Heavy Crop Damage in Indiana

PURDUE, IND.—The lowly spittlebug again has jumped into Indiana fields to claim a share of the crops—and a loss to farmers on no small scale.

Heavy infestations of the pest are reported in Shelby and Decatur counties, especially.

M. C. Wilson, research entomologist, says the Decatur inroads are running as high as 400 of the bugs per square foot on alfalfa and clover, with losses as high as a ton of hay per acre. Dwight W. Brinson, Shelby County agricultural agent, estimates damage as bad in that area.

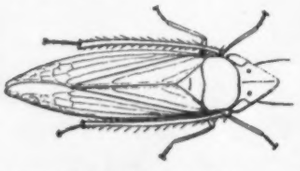
A field demonstration on spittlebug control was held on the Stewart Hybrid Corn Farm, three miles east of Greensburg. Mr. Wilson showed how to knock out the spittlebug invaders with insecticides, emphasizing early hatch treatments.

South Dakota Hoppers Hatching in Heavy Numbers

BROOKINGS, S.D.—In numerous parts of the state, grasshoppers are hatching in heavy numbers, according to Bill Hantsbarger, extension entomologist at South Dakota State College.

Especially heavy hatches in the north central, central and southeast parts of the state were reported. Scattered parts of the west also are getting a heavy hatch, Mr. Hantsbarger added.

He suggested that farmers keep a close watch on field margins, fence rows, weed patches, soil bank acreages and ditches for young hoppers. Control measures on alfalfa and clover should start after the first hay crop is removed.



Spotted Alfalfa Aphids Threaten Alfalfa Crop

UNIVERSITY PARK, N.M.—The spotted alfalfa aphid, first discovered in New Mexico in 1954, is on the rampage again. Over 400,000 acres of alfalfa are threatened by the bug, says John J. Durkin, entomologist with the New Mexico State University Extension Service.

The aphids are building up in most alfalfa-growing areas throughout the southern one-half of the state. Many growers are controlling the pests with insecticides. But too many growers are unaware that aphids are damaging their alfalfa crop, he said.

In 1954, the spotted alfalfa aphid, then called the yellow clover aphid, cost New Mexico alfalfa growers $4 million. Most of this was attributed to loss in yield; however, $2½ million which the aphid cost farmers in 1955 was mostly control expense. There was some loss in yield. In 1956, 1957, and 1958, the spotted alfalfa aphid cost alfalfa growers about $3½ million.

First Ragweed Infestations Found in Oregon Counties

SALEM, ORE.—The agriculture department has located the first ragweed infestations this year in Jackson and Josephine counties and in four areas between Salem and Aumsville.

Spray operations will start soon, George Moose, plant division assistant chief, said. Delmar Younde, Grants Pass, and Max Brown, Salem, are working full time on surveys.

Alfalfa Weevil Count High In Colorado Counties

FT. COLLINS, COLO.—The Colorado Insect Detection Committee has reported extremely high alfalfa weevil populations in Pueblo and Larimer counties. Counts were highest in Pueblo County at 1,500 to 5,000 per 100 sweeps while Larimer County populations ranged from 500 to 1,200 per 100 sweeps.

Highly significant, however, is that about 40% of the insects have been parasitized, a fact which reduces damage considerably.

On the Western Slope, alfalfa weevil population was only moderately high in Mesa County and low in Delta, Garfield and Montrose counties.

The pea aphid count in Pueblo and Larimer counties was also extremely high in alfalfa fields. Pueblo County reported 2,500 to 4,000 per 100 sweeps, compared with 500 to 1,000 in Larimer County. In Delta and Montrose counties, the count was low.

A cheering bit of news was that no spotted alfalfa aphid had been found in Pueblo County fields. In previous years, this insect has appeared by this time.

On truck crops, a moderately high infestation of seed corn maggots is reflected in Western Slope bait trap counts of that insect's adult stage. The insect has also appeared in Weld County, but only in moderately low numbers.

Also in Weld County, some adults of the sugar beet root maggot have been noted but the count is low compared with past years. Some adults of the western wheat stem maggot have appeared in Weld County but numbers are still low.

Larimer County has reported a few potato psyllid adults. Numbers are still low but some increase has been noted and a few eggs have been found.

The first significant numbers of codling moth were taken in Garfield County bait traps. The first summer cover spray was set for completion June 3 in Rifle, Silt, and New Castle areas.

Lygus bug infestations in Mesa County peach orchards were light and little injury to fruit has been reported.

A final welcome note was that no evidence of greenbug infestation has been found in wheat fields in Weld, Adams and Morgan counties.

Federal and state surveyors are continuing a close watch on the 1959 grasshopper threat.

Seasoned hands are now making a second sweep over possible areas of infestation. Early findings show the grasshoppers concentrated in isolated pockets throughout eastern Colorado.

"There are, however, no solid blocks of infestations, such as existed in 1958," reports Gordon Mickle, extension entomologist at Colorado State University.

For the most part, trouble is localized in northeastern Colorado—the direct result of flights out of southeastern Colorado in 1958. The infested pockets are made up mostly of M. bilituratus (or lesser migratory) grasshoppers.

Most damaging infestations are limited to cropland, Mr. Mickle states. However, many of the insects are turning up on weedy stubble and on land placed in the Soil Bank's conservation reserve.

Grasshopper Infestation Imminent in West Texas

BIG SPRING, TEXAS—A serious infestation of grasshoppers appears imminent in many parts of West Texas. Jimmy Taylor, county agent of Howard County, says that grasshoppers just hatching out have already attacked young cotton and are on the move.

Mr. Taylor says the hoppers are the flying variety and appear to be hungry as they leave fence rows in the march across cotton fields. Other county agents and entomologists have made similar reports and warn farmers to delay no longer in their control methods.

Early season insects such as thrips, aphids and fleahoppers appear to be building up fast. Still more trouble looms in the form of jack rabbits which are more numerous than ever before. Despite the many rabbit drives made this spring, the long-eared bunnies are now coming out of the pastures into cotton and grain sorghum fields.

European Elm Bark Beetle Found in South Dakota

BROOKINGS, S.D.—The insect that spreads deadly Dutch elm disease in American elms has been found for the first time in South Dakota. So far, however, the disease has not shown up.

Gerald B. Spawn, entomologist of the South Dakota State College agricultural experiment station, says beetles from the Dell Rapids area have been identified as the smaller European elm bark beetle.

Downy Mildew Damages Georgia Watermelons

TIFTON, GA.—Downy mildew, a fungus disease causing severe damage to watermelons, cantaloupes and cucumbers, was found between Trenton and Lake City, Fla., according to information released by Georgia Coastal Plain Experiment Station in Tifton.

The last year that the disease caused serious damage in Georgia was 1957. Its progress up through Florida then was about the same as it has been this year. Dry weather checks progress of the disease, and humid weather brings it faster, the experiment station reported.

Saga of Insect Pest Control

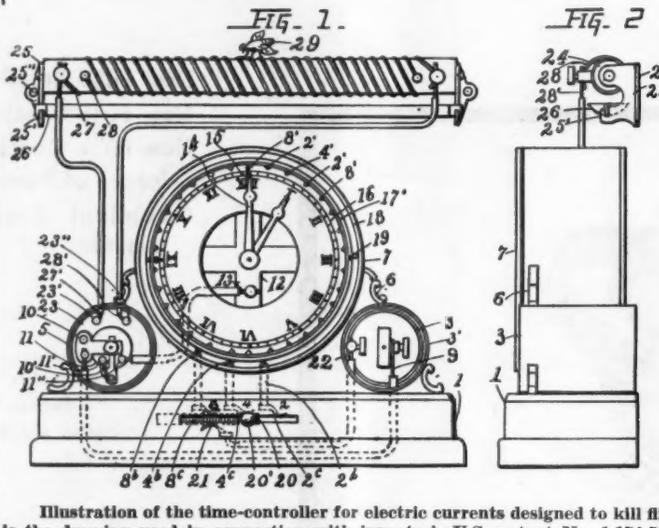


Illustration of the time-controller for electric currents designed to kill flies is the drawing used in connection with inventor's U.S. patent No. 1,174,504.

WHEREAS DEVICES for the application of heat, smoke, fire, toxic materials and mechanical means of catching or killing insects have characterized the usual run of machines for this purpose, at least one inventor dreamed up a real shocker to kill flies. Shocking to the flies, that is.

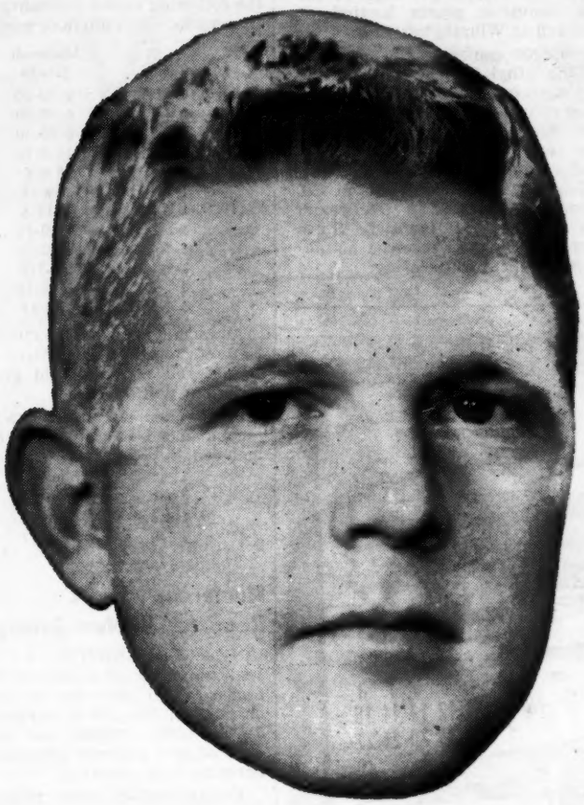
Under U.S. Patent 1,174,504, dated March 7, 1916, one Jacob Jones of St. Joseph, Mo., described his device for killing flies as consisting of a time-controlled electric current "by which electric devices . . . shall intermittently be energized at the ends of periods of time, of predetermined duration, for economizing in the use of electric energy."

He specified that the device should be "particularly adapted to the controlling of electric currents used in energizing electric exterminators for killing pests."

Figures 1 and 2, shown above, present details of how the gadget works. The coil at the top is the "hot spot" where Mr. Fly is invited to get his feet energized. The coiled wires "are properly spaced to be trod upon, at the same time, by the feet of a fly (29) standing thereon," the explanation indicates. The electrical current was to be supplied by a battery, and the clock itself was operated by a wind-up mechanism.

The clock's minute hand carried an electrode which came into contact with a fixed electrode at predetermined intervals, sending a surge of current into the coil and thence into the fly. The fly, having been killed by the shock of it all, "gravitates into a catch-trough" which the operator may empty at any time.

THE MAN WITH THE MULTIWALL PLAN



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New Mexico's Cotton Counties Get 76% Of State's Fertilizer

UNIVERSITY PARK, N.M.—Four cotton counties received 76% of the 21,586 tons of commercial fertilizer shipped into New Mexico in the first quarter of 1959, according to Gordon B. Hoff, agronomist with the New Mexico University Extension Service.

Dona Ana County ordered the top tonnage in the January-March period, 5,556; Chaves County was a close second with 5,464; Eddy County was third was 3,458, and Lea fourth with 1,902. Over half of the total tonnage shipped into the state in the first quarter was 20, 45 and 46% superphosphate.

First quarter shipments into the state indicate that New Mexico farmers may set a new record in fertilizer use in 1959, Mr. Hoff says.

Figures for 1958 show that farmers used 37,873 tons of commercial fertilizer. The only year this tonnage was exceeded was in 1957 when 38,296 tons were used.

Fertilizer used by farmers in New Mexico has increased almost threefold in the last ten years, Mr. Hoff explains. He attributes this healthy year-to-year increase to continuing low prices of fertilizer in relation to the increased profits that come to farmers from the use of recommended amounts. Improved farming methods and crop varieties with higher yield potential have helped to increase the efficiency of fertilizers.

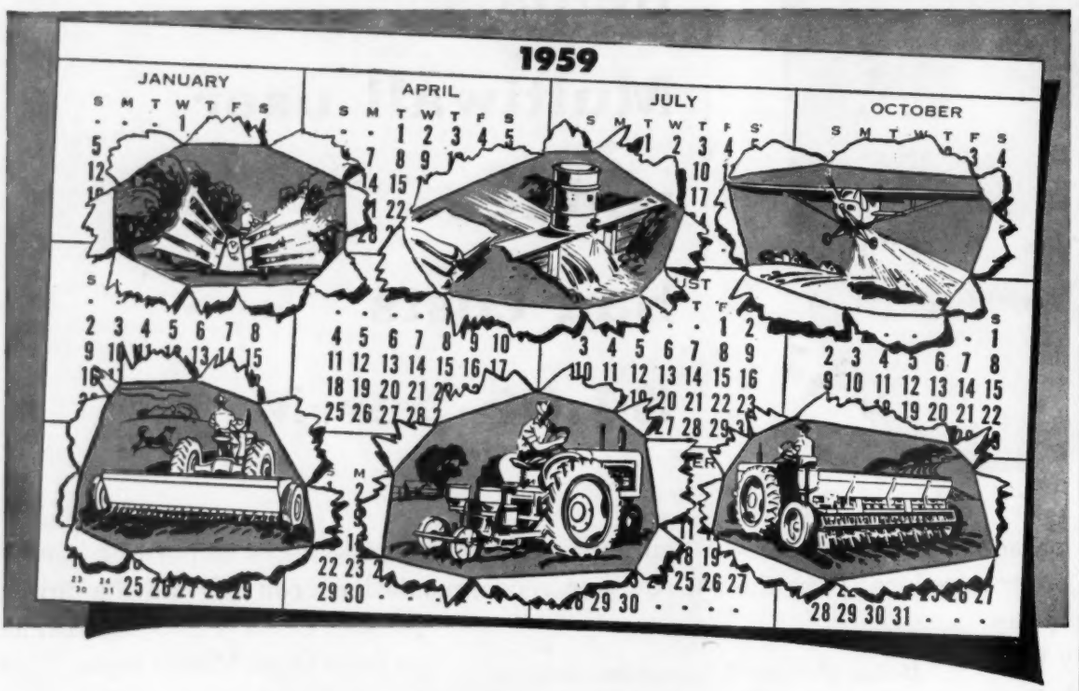
LEATHER FERTILIZER

BROOKS, MAINE—The Maine Reduction Co., a firm in Brooks, is using a new process for converting leather scraps into fertilizer. Joseph J. Grady, owner of the company, said the fertilizer is powerful as a booster because of its high nitrogen content—12%.

Robert T. Edgar Joins Pacific Coast Borax

LOS ANGELES—Pacific Coast Borax Co., a division of United States Borax & Chemical Corp., has announced the appointment of Robert T. Edgar as division vice president in charge of production. According to J. F. Corkill, vice president and general manager of the division, Mr. Edgar will have over-all supervision of the Borax company plants located at Boron and at Wilmington, Cal.

Mr. Edgar comes to the company from the Ethyl Corp. where, for the past fourteen years, he has held successive managerial poitions, the most recent being manager of manufacturing with Ethyl Corporation of Canada. Before his Ethyl affiliation, Mr. Edgar was with the DuPont Co. in Baton Rouge, La. for five years. He is a graduate of Louisiana State University where he received his degree in chemical engineering.



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MEMPHIS—Home Federal Bldg., JAckson 7-1551 • CHICAGO—75 E. Wacker, FRanklin 2-6424

TAMPA—2808 S. MacDill Ave., 82-3531 • NEW YORK—7 Hanover Square, Digby 4-1200

State Plant Board Issues Grade, Ratio Recommendations

LITTLE ROCK, ARK.—The Arkansas State Plant Board approved for sale in Arkansas for the period of July 1, 1959 through June 30, 1960, the following mixed commercial fertilizer ratios and minimum grades:

Ratio	Minimum Grade
0-1-1	0-20-20
0-1-2	0-10-20
0-2-3	0-20-30
1-0-1	14-0-14
1-1-1	8-8-8
1-1-2	9-9-18
1-2-1	6-12-6
1-2-2	5-10-10
1-4-4	3-12-12
2-1-1	14-7-7
2-1-2	10-5-10
3-4-6	6-8-12

Ammonium phosphates (10-20-0, 16-20-0, etc.) will be considered as materials and no ratio and grade restrictions will apply.

Ratios and minimum grades not recommended but approved for sale included:

Ratio	Minimum Grade
1-3-6	3-9-18
2-3-9	6-9-27

Numerous Insects Reported in New Jersey

NEW BRUNSWICK, N.J.—European red mites are numerous in a few orchards, but very few in most orchards. On May 18 in southern New Jersey adult females had produced eggs of first summer generation. No hatching was observed.

Empty codling moth pupal cases were very numerous about a cider bin on May 18 indicating emergence of moths. First generation leaf roller seems to be well controlled.

Mites are still numerous in strawberries. They should be taken care of before it becomes too late from the standpoint of residue considerations. Aphids are still quite scarce in fields where they were abundant in 1958. The first alate forms were observed late in May.

Cranberry fruitworm eggs were found on early and mid-season varieties on Saturday, May 16. First entries by these larvae were expected to occur about May 26. DDT used with parathion in curculio treatment should prevent entry of these early eggs. This mixture should be used by all growers who had trouble with the green worms last year.

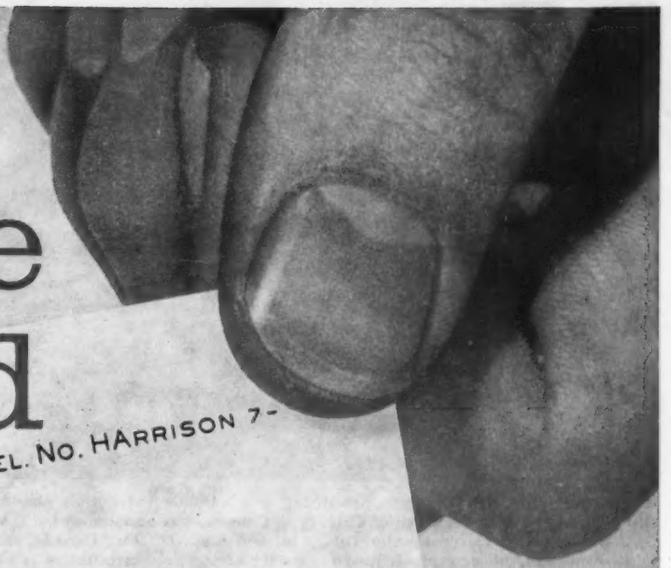
Severe damage from the cabbage maggot was reported from Atlantic County, and Colorado potato beetles are very numerous in fields now. As many as 5 or 6 per hill were observed in Burlington County. Egg laying is just beginning.

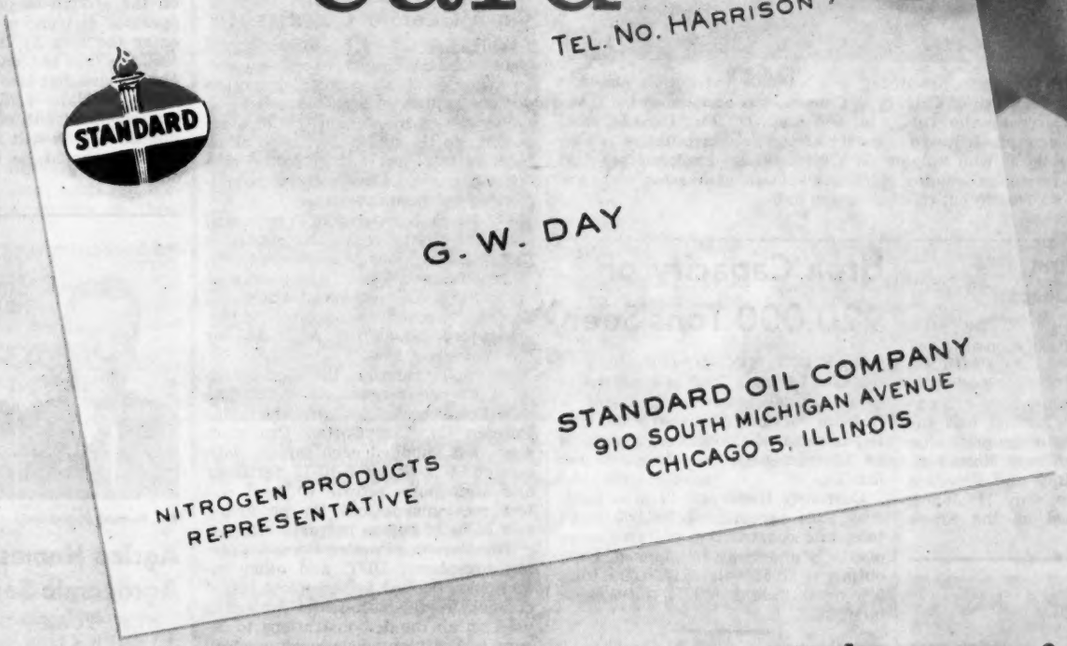
No egg masses of European corn borer yet observed. It is too early in central New Jersey for the borer sprays. No aphids were observed and only a few flea beetles.

Costs to Rise

SAN FRANCISCO—Addressing the annual membership meeting of the Wine Institute here, Dr. George L. Mehren, agricultural economist and director of the Giannini Foundation at the University of California, said, "Prices paid for goods and services in farm production are expected to be higher in 1959 than in 1958. Wage rates paid to hired labor and prices paid for non-farm goods and services, except fertilizer, are still rising, and probably will average higher in 1959 than in 1958. Prices of fertilizer are expected to remain about at present levels, and land values, interest, taxes and insurance costs are expected to continue upward."

Welcome card





to buyers of

Anhydrous Ammonia and Nitrogen Solutions

A welcome card? Yes, indeed. Here's why:

1. This card is presented by a man from a company that backs up its salesmen's promises for delivery and for products that meet a customer's specifications.

2. The customer doing business with Standard Oil knows he is buying from a company with an established reputation . . . a company he knows will give him fair treatment, service and product quality.

3. Standard's modern Ammonia and Nitrogen Solutions plant is located in the heart of the country's largest rail- and truck-shipping area. To a customer this means fast, sure deliveries . . . deliveries that can be easily controlled because routes are direct and distances short.

A modern plant capable of producing Ammonia and Nitrogen Solutions on specification. A supplier who knows a customer's requirements *and delivers*. These add up to service a Midwest buyer of Ammonia and Nitrogen Solutions can depend upon. Would you like a Standard Oil man to call on you? Write, wire or telephone Nitrogen Products Department, **Standard Oil Company, 910 South Michigan Avenue, Chicago 5, Illinois.**

You expect more from STANDARD and get it!

START-UP of a new sour-gas processing and sulphur extraction plant at Okotoks, about 25 miles south of Calgary in Canada, was announced by Texas Gulf Sulphur Co., Devon-Palmer Oils, Ltd. and Shell Oil Co., Canada, Ltd., joint owners of the new plant. Rated capacity of the new installation, which is being operated by Texas Gulf Sulphur, is 370 long tons of sulphur per day. The gas gathering system, sweetening plant and sulphur conversion units are designed to process 30,000,000 cu. ft. of sour gas daily.

New Dusting Firm Formed in Arkansas

CONWAY, ARK.—The Tupelo Dusting Service, Inc., of Conway, has filed articles of incorporation with the Arkansas secretary of state's office at Little Rock. The firm, which will operate a crop dusting service, was authorized 1,000 shares of no par value stock. Incorporators were Robert F. Robb, Edward B. Ray and Florence Ray, all of Conway. Guy H. Jones, Conway, was named as the firm's agent.

Henry H. Hunter

COMMUNICATIONS DIRECTOR—Henry H. Hunter has been appointed director of communications for Olin Mathieson Chemical Corp., announced Gordon Grand, vice president for administration. He has been director of public relations. In the newly created position, Mr. Hunter will supervise advertising, public relations and stockholder relations for the corporation and its divisions. Mr. Hunter joined Olin Industries, Inc. in 1954 as product publicity supervisor. After the merger of Olin with Mathieson Chemical Corp., he was appointed publicity manager of the new company. He subsequently became assistant director of public relations, and in 1957 was named director. Prior to joining Olin Industries, Mr. Hunter had been assistant public relations director at Grant Advertising, and before that assistant publicity director at Ross Roy, Inc. in Detroit.

Urea Capacity of 920,000 Tons Seen

WASHINGTON—Urea capacity in the U.S. by early 1960 is expected to total 920,000 tons, the Business & Defense Services Administration, U.S. Department of Commerce, reports in its current issue of Chemical and Rubber.

Currently there are 12 urea facilities with capacity of 796,000 short tons, and construction of three more plants is underway or planned. Urea output in 1958 totaled 530,000 tons, 9% more than in 1957, the department said.

International Anti-Locust Aircraft Unit Proposed

ROME—The possibility of establishing an international anti-locust aircraft unit has been explored by a panel of experts convened here by the Food & Agriculture Organization.

FAO said that if the plan is put into effect the unit would increase the opportunities for inter-territorial cooperation and international assistance in the fight against the desert locust.

A census taken by FAO in 1957 showed that 171 fixed wing aircraft and four helicopters were then in use against the desert locust in 23 countries and territories, and more are now available.

If an international anti-locust aircraft unit were established, the expert panel considered that it should be composed of a sufficient number of aircraft to ensure a total spray-carrying capacity of 1,000 gallons of concentrated insecticides. Host countries would be requested to provide ground services and a total of 1,000,000 gallons of insecticides would be maintained in stock in the interested countries. This stock would be stored in strategically sited areas.

Nelson T. Bagnell Joins John Bean Division

LANSING, MICH.—Nelson T. Bagnell recently joined the John Bean Division of Food Machinery & Chemical Corp., Lansing, Mich. Mr. Bagnell will be district sales manager for the division's agricultural sales department. His territory includes eastern New York and sections of Vermont and Massachusetts.

Having several years of experience in the sprayer industry, Mr. Bagnell comes to the John Bean organization from the Hardie Manufacturing Co.

That Time of Year Again

Fast Dollar Artists at Work in Iowa

AMES, IOWA—Reports that self-styled "expert arborists" are at work on Iowa homeowners came from Iowa State College Cooperative Extension Service county field offices in widely separated parts of the state recently.

Harold Gunderson, entomologist, and H. S. McNabb, plant pathologist, after receiving the county reports, warned Iowans to beware of anyone with "wonderful" chemical treatments that control all kinds of tree diseases and insects.

One system reported involves boring holes in the trunks of trees, pouring a secret chemical into the holes and collecting money from the householder with a promise that this will destroy all chewing and sucking tree insects. Another system involves root feeding with a different secret chemical to control plant diseases, particularly Dutch elm disease and oak wilt.

The salesmen appear to be exploiting home owners' and public officials' fear of Dutch elm disease, and a natural craving for "cheap" protection. Mr. Gunderson said that the tree-boring scheme is not recommended in Iowa at present.

A southeast Iowa incident involved "root feeding" of the tree with the secret chemical. The operator, Mr. McNabb said, sprinkles his chemical on the ground around the tree. This operator guarantees his product will enter the tree by its roots and protect the tree not only against Dutch elm disease, but also against oak wilt.

Mr. McNabb said the claim that any chemical will control Dutch elm disease or oak wilt without scientific backing should be enough to cause suspicion.

Correct Cotton Raising Practices Demonstrated On 8 Georgia Counties

ATHENS, GA.—The University of Georgia, agricultural extension service, has established complete cotton demonstrations in eight counties.

Purpose of the demonstrations, according to the university, is to allow farmers to compare their cotton production practices with those recommended by the university.

W. H. Sell, extension agronomist, said that county agents will supervise the cotton demonstrations, according to recommendations of the college of agriculture. Each demonstration will be used to teach cotton growers recommended production practices for the respective area.

Mr. Sell said that the demonstrations are being sponsored by the Cotton Producers Assn. and Hercules Powder Co. The Cotton Producers Assn. has supplied each farmer with enough 4-12-12 or 5-10-15 fertilizer and ammonium nitrate to meet soil test recommendations for producing two bales of cotton per acre.

The Hercules Powder Co. is supplying toxaphene, DDT, and other insecticides needed for complete insect control. Liquid insecticides are being used on all the demonstrations to insure better plant coverage under all weather conditions, Mr. Sell explained. A grant in aid to the agricultural extension service for conducting the insect control program is also being supplied by Hercules Powder Co.

Mr. Sell said that a similar program was conducted during 1958 on more than 400 acres in 13 counties. An average yield of 952 lb. of lint cotton per acre was obtained at a production cost of approximately 25¢ per pound.

Allied to Continue Present Solution Prices

NEW YORK—Allied Chemical will continue the present price of its nitrogen fertilizer solutions through the third quarter of this year, it was announced by M. E. Hunter, vice president of Allied's Nitrogen Division.

The current price for representative nitrogen solutions per ton of nitrogen is $120. This price will be continued through September. For the fourth quarter, it will advance, as is usual for the season, to $124 per ton. On Jan. 1, 1960, it will be $128.

Mr. Hunter said that his company's move was a return to the price schedule of 1957, before the 1957-58 recession. He also stated that spot shortages of nitrogen products had occurred during the current planting season, indicating a resumption of the steady growth nitrogen fertilizers have experienced during the past 20 years. He pointed out that nitrogen prices today were practically identical to those of 1940, while all other products bought by farmers have increased in price many times.

WANT CONTROL DISTRICT

ONTARIO, ORE. — Alfalfa seed growers in Sunset Valley have petitioned for an insecticide control district, according to George Folkman, president of the Malheur Legume Seed Growers Assn.

Dr. Donald P. Satchell O. C. Leetun

Agrico Names New Agronomic Services Head

NEW YORK—Dr. Donald P. Satchell has been named manager of agronomic services for the American Agricultural Chemical Co., W. J. Turbeville, Jr., vice president in charge of fertilizer sales, announced. He replaces O. C. Leetun, who has requested to be relieved of administrative duties because of ill health. Mr. Leetun, who has been with Agrico for 40 years, will remain active in an advisory capacity, Mr. Turbeville said.

Dr. Satchell joined the Agrico organization in February of this year. Since 1951, he had been on the agronomic research staff of Pennsylvania State University.

Dr. Satchell was awarded a B.S. degree and a M.S. degree from Michigan State University, and a Ph.D. from North Carolina State College.

In addition to teaching duties at Penn State, he was instrumental in determining soil and crop needs for fertilizers, leading to practical recommendations for fertilizer use. His doctoral thesis delved into the interaction of fertilizer phosphates in the soil. Also in his work at North Carolina, Dr. Satchell was one of the early research workers to use radioactive isotopes in tracing the movement of phosphates in the soil. His work leading to the M.S. degree included an investigation into the physical properties of soils, and factors influencing germination and emergence.

USDA PUBLICATION

WASHINGTON—The U.S. Department of Agriculture has issued a publication dealing with market diseases of beets, chicory, endive, escarole, globe artichokes, lettuce, rhubarb, spinach and sweetpotatoes. A copy of the publication, Agriculture Handbook No. 155, may be obtained free from the Office of Information, U.S. Department of Agriculture, Washington 25, D.C.

SPECIAL MERCHANDISING SECTION

BETTER SELLING

MARKETING NEWS AND FEATURES

Money Saving Hints for Direct Mail Operation

By PAUL LOCKWOOD
Croplife Special Writer

Your direct mail advertising dollars can do double-duty . . . or drip down the drain. It all depends. Here are seven ways you can save money on your direct mail advertising:

1. Use Current Mailing List

When your mailing list is not correct, you can lose money in these ways:

- Advertising goes to the dead letter office.
- Extra cost for forwarding or returning your advertising.
- Customers lost because incorrect names are not complimentary.
- Mail delayed while the address is corrected and forwarded.

You will save money when your mailing list measures up on these points:

- Every name should be complete —first two initials or first name of customers.
- Title should be correct — Mrs., Miss, Dr., etc.
- Spelling of names should be correct—check to be sure.
- Address must be right—check on street, avenue, road or boulevard.
- Zone number (if any) speeds mail delivery and completes address.

When your mailing list of prospects and customers measures up on these five points, you will eliminate a great deal of waste. You will not be sending your direct mail dollars to the dead letter office.

2. Keep Your List Correct

Advertising experts estimate that a mailing list that is 100% correct today will be only 97% correct in thirty days. People move, die, get married or divorced, change names, develop new interests or satisfy old wants.

Here are the most effective methods you can use to keep your mailing list up-to-date:

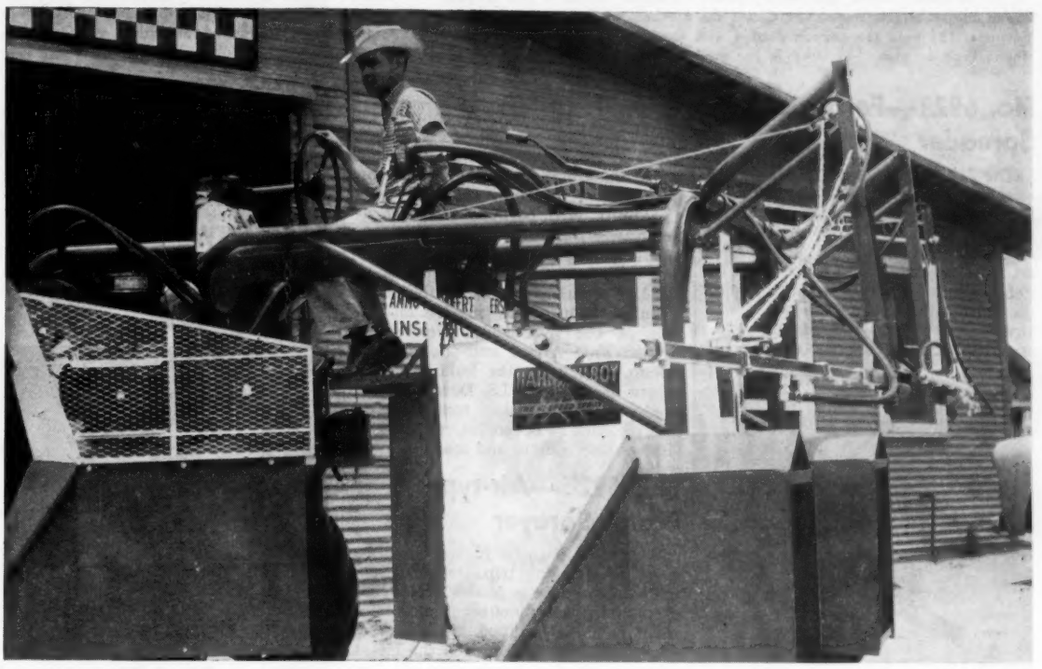
Form 3547: The post office will help you keep your mailing list correct at a nominal cost. On third-class mail, you can request that Form 3547 be returned correcting the address used in error. Cost for this is only 5¢ per name corrected—no charge for names and addresses that are right when you make your advertising mailing.

There are several ways you can state the request on Form 3547 on

(Turn to SEVEN WAYS, page 13)

Seven Money Savers on Bulk Advertising

1. Use Current Mailing List
2. Keep Your List Correct
3. Use Best Postage Rate
4. Try Bulk Rates for More Savings
5. Use Printed Permit on Envelope
6. Use Printed Addresses
7. Use Government Post Cards



GERALD HANSON, manager of the Stanton Chemical & Seed Co., Stanton, Texas, drives one of the Hahn Hi-Boy sprayers which his firm handles. Mr. Hanson tries to sell farmers a "packaged deal" which includes planting seed, farm chemicals and the equipment needed.

Texas Dealer Says . . .

Knowledge of Fertilizer, Understanding Its Value to Farmers Necessary Sales Tools

By JESS BLAIR
Croplife Special Writer

Merchandising fertilizer is mostly a matter of learning what it is, how it will help farmers increase profits, and then making a consistent effort to sell it.

This is an over-simplification of how Gerald Hanson of Stanton, Texas, explains his 1958 fertilizer sales which amounted to over 1,800 tons and will likely reach the 2,000-ton mark this year.

As manager of the Stanton Chemical & Seed Co., he increased business by more than a third the first year, and did it at $3,000 less expense than the year before. Sales were up on all merchandise, which includes feed, seed, farm equipment, insecticides and other agricultural chemicals.

One example of Mr. Hanson's alertness stemmed from the farmers' desire for a less expensive spraying method. He began investigating various types of sprayers and finally got the dealership on the Hahn Hi-Boy, which can navigate through the tallest cotton. Last year he sold four of these machines for more than $2,600 each and seems likely to increase the number this year. In addition, he sold 15 smaller pull-type sprayers for $525 each.

"We set the machine out in front of the store," he explained, "and started talking about them to everyone who came in. When a farmer became interested, we set one up for him and showed him how it operated. When sales are made, we go to the cotton field and get the machine started for the owner, and may drop back later to make adjustments."

Until less than two years ago Mr. Hanson was the local county agricultural agent. Still on the under side of 30, he had become recognized as one of the really outstanding agents in West Texas, and was already getting offers from business firms. When the Stanton Chemical & Seed Co. offered him a salary and one fourth the net profits, he decided to take it.

He knew very little about business, but he knew agriculture and how to get along with farm people. He had always been a hard worker who paid no attention to hours as long as a piece of unfinished work remained. When he went into the store, he immediately put these qualities to good use.

As a county agent he had noticed what he thought was a potash deficiency in irrigated cotton. He talked to other agronomists and sent off soil and tissue tests, and learned that while potash in the soil was adequate much of it was in unavailable form.

Once again he started talking to everyone who came into the store, explaining that potash might be profitable. Before long he was selling it. In 1958 the sales were 50 tons, but this last spring had already reached 80 tons and promised to pass the 100-ton mark before mid-summer.

Another material that interested Mr. Hanson was gibberellic acid. By using the easy-sell method, that of explaining things instead of insisting, he got several farmers to use the product. Results were mixed but weighed on the favorable side, so this spring he sold enough gibberellic acid to treat 25,000 lb. of cottonseed.

"I never took any courses in salesmanship," he said, "but I wouldn't try to sell a farmer something he didn't need, anyway. We know fertilizers will pay off when there is enough moisture. It can be put on the wrong way; it can be wasted when there is too much or too little used. I don't see how a dealer can really sell fertilizer unless he knows what's in the sack. Even though he hasn't studied it in college, there are many sources of information available. He should make every effort to learn about his products."

Mr. Hanson has been partly responsible for winter fertilization in his area. He pointed out that winter fertilization would hasten decomposition of heavy stubble, and growers would apply the materials while other farm work was slack. This also helps the Stanton Chemical & Seed Co. by making sales more general throughout the year.

Insecticide sales have also increased steadily. As county agent, Mr. Hanson spent much time in the fields making insect counts. While he doesn't get out as often now, he still makes a few nearby trips each week during growing season. When an infestation starts building up, he makes sure the store has a sufficient amount of insecticides.

Other chemicals increasing in sales are seed inoculants, rat poison and livestock and poultry remedies.

One reason the owners are pleased with their manager is because overhead has been reduced. He does this by keeping only a minimum crew of workers. The large store has a driveway down the middle so that trucks can load or unload easily. Customers can also drive their pick-ups inside and be loaded from the three-foot platforms on either side. For this

(Turn to SALES TOOLS, page 15)

WHAT'S NEW
IN PRODUCTS · SERVICES · LITERATURE

To obtain more information about items mentioned in this department simply: (1) Clip out the entire coupon in the lower corner of this page. (2) Circle the numbers of the items of which you want more information. Fill in the name and address portions. (3) Fold the coupon double with the return address portion on the outside and fasten the edges with a staple, cellophane tape or glue. (4) Drop in the mail box.

No. 6921—Fertilizer Spreader

The John Blue Series "800" Chemi-Spredder has been added to the 1959 line of the John Blue Co., Inc. The unit can cover up to 20 acres an hour at rates in excess of 60 gal. an acre on a 28 ft. swath and more than 80 gal. an acre on the 21 ft. swath, company literature said. The unit's entire chassis is cold formed and welded. The boom is constructed of cold-

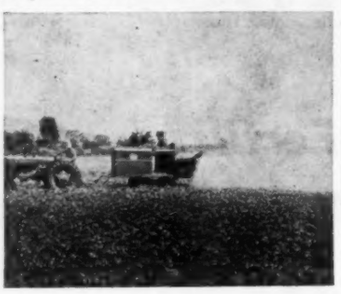
finished steel and a wide choice of nozzles is available, both broadcast and dribble type. A tool bar for subsurface application is also available. The broadcast nozzles are of stainless steel with a 40 in. spacing and a special wide angle pattern. More details can be obtained by checking No. 6921 on the coupon and mailing.

No. 6920—Insecticide Report

A booklet entitled "The Special Values of Pyrethrum Insecticides" is being distributed by Charles Hurd Associates. The booklet contains a report by the Armed Forces Pest Control Board which has compiled worldwide research study results on pest control problems faced by military units. With permission, the document was reproduced in full in this booklet for the information of civilians who face the same problems in the U.S. The booklet is distributed as a public information service on behalf of the pyrethrum growers in British East Africa and the Belgian Congo, who grow the bulk of pyrethrum used in the U.S. Details of the product's effectiveness, toxicity, etc., are included. For copies, check No. 6920 on the coupon and mail.

No. 6925—Air-type Power Sprayer

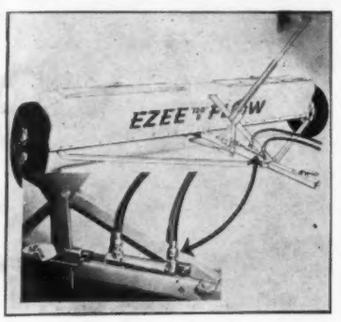
A swath up to 60 ft. wide can be covered with one trip across a field with the John Bean Model 30-RC Aircrop Sprayer, announced the John Bean Division of Food Machinery & Chemical Corp. The unit is the latest addition to the firm's line of Aircrops. Another new model, the 40-RC



Aircrop, a self-contained sprayer, will spray a swath up to 90 ft. wide. For more details, check No. 6925 on the coupon and mail to this publication.

No. 6922—Spreader Accessory

Ezee-Flow Division of Avco Distributing Corp. announces the availability of a "hydraulic control" accessory that fits all Ezee-Flow



spreaders. The hydraulic control cylinder automatically opens and closes hopper shutters by a single lever. It is no longer necessary to operate hopper shutters manually. The lever is on the tractor seat. Full details and a fertilizer application guide are contained in a booklet available from the company. Check No. 6922 on the coupon and mail.

No. 6923—Insecticide Sprayer

A new mobile insecticide sprayer is available from West Chemical Products, Inc. The unit was developed for large or small areas where compressed air is unavailable for fogging. It has a spray head of five aerosol nozzles that dry fogs insecticides three times faster than two-nozzle sprayers, the company said. The unit is designated the "Spacemaster." The unit produces a dry fog of insecticide particles in the aerosol range of 12

to 15 microns average diameter. With the proper insecticide, flying insects in 5,000 cu. ft. can be fogged in one minute, company literature stated. Range is from 40,000 to 50,000 cu. ft. from one position. Details are available by checking No. 6923 on the coupon and mailing.

No. 6924—Hand Insecticide Applicator

A hand applicator for use with Dri-Die Insecticide 67 has been designed by W. R. Grace & Co., Davison chemical division. The device consists of a polyethylene container to which two attachments can be fitted. One is a long nozzle to blow the powder into spaces where general distribution is desirable but not objectionable. The other is a spreading device which will roll the insecticide on a strip of surface accessible to the insects but which will avoid general dusting through the atmosphere. For details, check No. 6924 on the coupon and mail to this publication.

No. 6926—Fruit Spray Chart

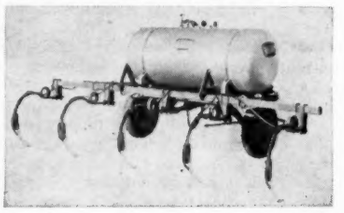
A chart which outlines recommended procedures for the control of a number of deciduous fruit tree insects and mite pests has been published by Stauffer Chemical Co. Major emphasis is on dosage recommendations of Trithion for delayed dormant, dormant and summer sprays and for post-harvest application to deciduous fruit. Crops include apples, crab apples, pears, cherries, plums, peaches and grapes. Copies of the chart can be obtained by checking No. 6926 on the coupon and mailing.

Also Available

The following items have appeared in previous issues of Croplife. They are reprinted to help keep dealers on the regional circulation plan informed of "What's New."

No. 6918—Ammonia Applicator

John Blue Co., Inc., has introduced an ammonia applicator called the



"Blue Nitro-Shooter" series "80." The machine has a tank capacity up to 310 gal., full 26 in. clearance, transport lock, alloy steel spindles, heavy duty Timken bearings, 12 ft. tierod free, 3 in. sq. tool bar and a short turning radius. It has a welded chassis. The machine comes with either 100, 150, 200, 250 or 310 gal. tanks. The metering device is a AND-Y pump or Nitrolator with speed and quantity control. The chassis has an 80 in. tread and over-all width of 96 in. The applicator comes with 1¼ or 1 in. alloy steel spring tine or high carbon rigid shank. The tool bar has an 8 ft. straight or 14 ft. folding length. For details, check No. 6918 on the coupon and mail.

No. 6915—Folder on Weed Killer

A folder is now available on "Urox" weed killer from Allied Chemical. According to the folder the product can be sprinkled or spread on soil to kill all weed growth in non-crop areas. The folder is illustrated with photos showing some of the weed control results that can be expected. General use information and application are included. For copies, check No. 6915 on the coupon and mail to this publication.

No. 6917—Bean Fungicide Guide

A Terraclor application guide for beans giving detailed information on the use of this soil fungicide is now being distributed by Olin Mathieson

Send me information on the items marked:

- ☐ No. 6912—Spreader Literature
- ☐ No. 6913—Folder on Miticide
- ☐ No. 6914—Soils Moisture Chart
- ☐ No. 6915—Folder on Weed Killer
- ☐ No. 6917—Bean Fungicide Guide
- ☐ No. 6918—Ammonia Applicator
- ☐ No. 6920—Insecticide Report
- ☐ No. 6921—Fertilizer Spreader
- ☐ No. 6922—Spreader Accessory
- ☐ No. 6923—Insecticide Sprayer
- ☐ No. 6924—Hand Insecticide Applicator
- ☐ No. 6925—Air-Type Power Sprayer
- ☐ No. 6926—Fruit Spray Chart
- ☐ No. 7499—Recirculating Fan

(PLEASE PRINT OR TYPE)

NAME .....

COMPANY .....

ADDRESS .....

CLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL

FIRST CLASS PERMIT No. 2 (Sec. 34.9, P. L. & R.) MINNEAPOLIS, MINN.

BUSINESS REPLY ENVELOPE
No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY—

Croplife

P. O. Box 67

Reader Service Dept. Minneapolis 40, Minn.

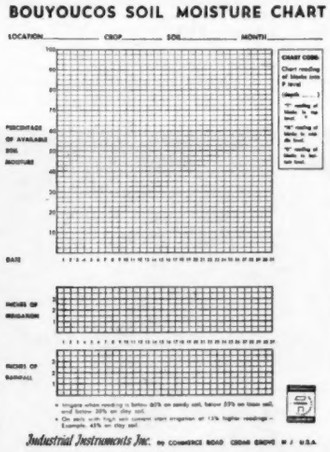
Chemical Corp. The illustrated 4-page guide's objective is to control root and stem rot and white mold. The guide tells how to get the most from Terraclor. It is a compilation of work by Olin Mathieson fieldmen, federal and state research personnel and growers who have used Terraclor to control the disease. Additional information can be obtained by checking No. 6917 on the coupon and mailing.

No. 6913—Folder on Miticide

A revised folder on "Genite," a miticide which is said to kill plant mites and their eggs in one spray, is available from Allied Chemical. The folder contains spraying information, and describes features of the product. Economics of using the spray are discussed and general use information is given. For copies, check No. 6913 on the coupon and mail to this publication.

No. 6914—Soil Moisture Charts

Industrial Instruments, Inc., announces the availability of a pad of soil moisture charts for plotting



measurements obtained for Bouyoucos Soil Moisture Meters and Blocks. Each chart provides room for recording percentage of soil moisture for a 31 day period as well as separate charts for indicating inches of irrigation and inches of rainfall. A free pad of these charts is available to Bouyoucos meter users. Check No. 6914 on the coupon and mail to this publication.

No. 6912—Spreader Literature

Literature on the "New Leader L-32S" engine driven combination lime and fertilizer spreader is available from Highway Equipment Co. The illustrated brochure contains specifications, construction features, detailed drawings of various components of the spreader and operating information. A section on optional attachments, with appropriate illustrations, is also included. For copies of the literature, check No. 6912 on the coupon and mail to this publication.

No. 7499—Recirculating Fan

The availability of a self-contained, recirculating fan for ventilation of out-door storage structures has been announced by Sprout, Waldron & Co., Inc. The fan is small and compact, the company stated, and is powered by a 1 h.p. totally enclosed 3450 rpm. motor. A weighed check valve prevents material from being blown out through the fan and into the filter when the storage is being filled. For details, check No. 7499 on the coupon and mail to this publication.

RICE BULLETIN

FAYETTEVILLE, ARK. — A discussion of mineral deficiency symptoms of rice is contained in Bulletin 605 recently completed at the University of Arkansas Agricultural Experiment Station in cooperation with the U.S. Department of Agriculture. Kenneth Olson compiled the report.

Clearing House for Information on Tree Fertilization Established

ATHENS, GA.—The establishment of a clearing house of information on nutrition and fertilization of southern forests by the National Plant Food Institute, in cooperation with the National Joint Committee on Fertilizer Application, was recently announced by Dr. Laurence C. Walker, southeastern regional forester for the institute.

This information center will receive details of experiments for subsequent distribution to interested persons. To receive these periodic releases, those on the mailing list are obligated to submit information relative to their own work on nutrition and fertilization.

Dr. Walker is presently soliciting participants and requesting brief summaries of research underway, including personnel, organization, location, and experimental description. Tentative conclusions are not desirable, but final results are. The first mailing to cooperators is expected by mid-summer.

Persons desiring to be included on the mailing list should address the Southeastern Regional Forester, National Plant Food Institute, 190 Hardin Drive, Athens, Ga.

Should response to this southwide program be favorable, the institute and the NJCFA plan to expand the scope to include all of the U.S. and Canada.

Dr. Walker points out that this venture is cooperative: Both the Southeastern Regional Forest Fertilization Task Force of the NPFI and the Forestry Sub-committee of the NJCFA are comprised of research and practicing foresters representing industry, government and education.

Speed handling, reduce pile set with Du Pont URAMON® Ammonia Liquors

You can keep production fast-moving and your fertilizer free-flowing with the added conditioning benefits of Du Pont "Uramon" Ammonia Liquors.

UAL helps to prevent the cementing, pile-setting action that often results from some other nitrogen formulations. As mixtures ammoniated with UAL cool, residual moisture combines with the compounds formed—leaving a dry mix remarkably free of excessive caking, segregation and dusting. Result—your UAL goods suffer less pile set, seldom require blasting and can be moved readily by the payloader.

In addition, Du Pont "Uramon" Ammonia Liquors are non-corrosive, can be used in ordinary steel equipment. Secondary set and caking in the bags are also minimized because the urea from UAL is non-reactive with other fertilizer ingredients. And UAL mixtures are highly drillable.

After application, the extra fertilizing benefits of UAL begin. UAL provides nitrogen in both the urea and ammonium form—nitrogen that becomes available at a rate closely paralleling plant requirements. Nitrogen from Du Pont UAL is also leach-resistant; remains in the root zone long after other forms have been exhausted.

Du Pont UAL is available in five forms, including UAL-37 for even more gradual nitrogen release, and UAL-S with the added conditioning effects of ammonium sulfate. For information on which type is best suited to your needs, write Du Pont.

E. I. DU PONT DE NEMOURS & CO. (INC.)
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URAMON®
AMMONIA LIQUORS

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

OSCAR & PAT

By AL P. NELSON
Croplife Special Writer

Lanky, blue eyed Pat McGillicuddy dropped his long legs from his desk and slammed a copy of Croplife on some papers. "What a darn fool I am!" he growled. "Why didn't I watch the papers to see that those National Plant Food Institute officials were on the National Farm and Home Hour the other day? Here I have to read about it in Croplife after it's all over."

"Ach, you readt too much, and get too many crazy ideas," Oscar Schoenfeld, his partner, said with a frown. Oscar was always figuring discounts and ways to cut costs.

"I do not read too much," Pat snapped, apparently in an ugly mood. "There is so much happening in business today you have to read to keep up."

"Read more about delinquent accounts then," Oscar snapped. "We got plenty of those, ach, and you never collect them."

Pat ignored the jibe. "Why, these National Plant Food Institute officials really told the American public a great deal about fertilizer. I hope millions of people were listening. Dr. Russell Coleman told them America is a 'have' nation rather than a 'have not' because fertilizer helps the farmer produce more from every acre with a smaller labor force. He to'd them that if we had no commercial fertilizers food would be about 20% short of demand. That wou'd send food costs up $2 billion!"

"Ach, big fellers like that are always talking on the radio," Oscar said. "I don't pay any attention. I schtick at my work and get it done. I don't believe in talk, talk, talk."

"Thank God, people talk," Pat put in sharply. "That's the only way one man can communicate his ideas to the next man. And Dr. Coleman says that one ton of plant food has the same crop producing power as has ten acres of land. Man, I can use that idea in selling fertilizer. I would like to meet this Dr. Coleman and Drs. Tisdale and Bahme and others that talked. I'll bet they could give me plenty of ideas."

"Ach, Himmel, nein," Oscar rolled his eyes. "Forget them. You know enough people—too many people. Stick aroundt this business once in a while. Stay away from all those Chamber of Commerce and Rotary meetings. Or go oudt and collect. Do you think the dollars farmers owe us will come rollink in to us by themselves?"

Pat suddenly whistled. "Oscar," he said, "I've got a dandy idea. The NPFI is holding a convention at the Greenbrier Hotel in White Sulphur Springs, W. Va., next week. I've always wanted to attend one. I'm sure they'll let interested dealers attend. I know I'd get plenty of good sales ideas from those men there. I could come back, begorra, and put the ideas to work for us to achieve greater sales."

"No!" thundered Oscar. "Stick to our own business, Irisher. Forget your ideas. Help the men in the warehouse when you get frisky. That will take some of the schteam out of you."

"We've had a good spring business," Pat went on excitedly. "About 14% over last year. We can afford to send me to that convention, Oscar."

Oscar paled and blinked. "Affordt to sendt you!" he finally echoed. "To a convention all the way to West Virginia? It wouldt cost—lemme see —Himmel, a couple of hundred dollars."

"But we'd get so much out of it," Pat said. "We owe it to ourselves to see what's going on down there, to talk with men who can show us how to sell more fertilizer."

"No, no, no!" Oscar thundered so loudly that Tillie Mason closed her eyes, then opened them and walked into the warehouse.

Oscar and Pat glared at each other, eyes bulging, and the panting of their breath was clearly audible to Ann Hydrous, the Maltese cat, who had opened one eye from her bed atop the safe.

"Then," Pat said with great finality, "then, Oscar, I shall go at my own expense. I'll take next week as one half of my vacation. Nora and I will go. You can't deny me my vacation pay."

Oscar swallowed hard. "You are a fool, Irisher. You owe everybody in town and then you run off to a convention. Ach, to build up our cash reserve, we shouldt not take a vacation this year. We shouldt both schtay and work like we didt last year."

Pat shook his head. "No, I went along with that idea of yours last year, Oscar, but not this year. I need a vacation even if you don't. Now I'm going home to tell Nora about this trip."

As Pat went out the door, Oscar shouted: "Andt don't phone or wire me for any extra money! I won't sendt any—you, you waster!"

Pat McGillicuddy was still shaking when he got home. His tall, dark haired wife Nora kissed him and clung close to him. "And what's wrong with Sir Galahad today, Pat?"

Pat laughed. "Ach, and how you know me, my dear." He sat down and told Nora about the proposed NPFI trip and Oscar's reaction. "And so, you and I will go, dear. It will be our first vacation trip out of the state in years. Colleen is 16. She can care for the brood while we're gone."

"It's going to cost a lot, Pat," Nora said wistfully, "but I'd like to go. Oh, would I need to buy a formal?"

"Great, Bill...this SPM

...it took Bill just 15 minutes to review the Sul-Po-Mag program and magnesium story.

Alf Oines (right), and Bob Freske (center), president and vice-president of the Michiana Chemical Co., of Niles, Michigan, will continue to profit from the SPM program. They're shown here with Bill Lane, IMC Potash sales representative.

3. *"Bill, you may recall that we recently used various elements of your program . . . mailers, envelope stuffers . . . and found them very helpful in pushing our own brand. And we may want to take advantage of your imprinting service on some of the other materials."*

4. "Here are examples of our Sul-Po-Mag editorial ads that are being run in farm publications this year. Each ad creates awareness of a need for magnesium . . . tells farmers the name of the product that corrects or prevents it . . . and displays the seal as the sign of Sul-Po-Mag."

Ask your IMC potash representative how the Sul-Po-Mag seal program can help boost your fertilizer sales

From its start several years ago, International's Sul-Po-Mag sales program has rapidly gained momentum. Sul-Po-Mag is well accepted as the ingredient in your mixed fertilizers to prevent and help correct magnesium deficiencies.

The SPM program is supported by full-scale national and local informational and product advertising. Ads written for specific crops are directed to growers throughout the nation. Growers of tobacco, potatoes, fruits and vegetables are all receiving SPM information. These magazine ads are backed up by radio commercials, direct mail, and publicity. Also, a large amount of work is being done to promote magnesium through influence groups such as county agents, vo-ag teachers and agricultural extension people.

The net effect . . . growers and influence groups are becoming more acquainted with the growing problem of magnesium deficiency. Sul-Po-Mag is widely recognized as the best way to combat magnesium shortages. As a result more and more growers are looking for the SPM seal on the mixed fertilizers they buy.

Fertilizer manufacturers using Sul-Po-Mag can take advantage of this promotion by identifying themselves and their products with newspaper ad mats, tags, seal imprints, imprinted direct mail pieces and posters . . . all available at no cost. For full information on the SPM program — and for information on IMC's full line of potash products — contact your International representative or write c/o the address at right.

"I don't think so. Semiformal dress, Nora. You'll be the prettiest woman there no matter what you wear."

"Oh, you," blushed Nora. "But I must admit I'm getting excited. Just think, a big convention and at a fine hotel like that."

"And meetin' all those people," Pat said, his blue eyes shining. "Nora, this is a day of big ideas. If you want to make your business big you've got to go where men have big ideas, so some of them will rub off on you. I want to learn how to think bigger and better. A man can't keep thinkin' and usin' small ideas in this world for years and expect to get anywhere."

Nora came and sat on Pat's lap and lovingly twitched his right ear. "Ah, I love you when you dream like that, Pat," she said softly, resting her head on his shoulder. "I hope I nivver see the day when you stop dreamin'."

Pat's face was serious for a moment. "I hope so, too, me darlin'. Now let's talk about what we'll take for that long auto trip. I hope the tires on the old Buick will last."

SEVEN WAYS

(Continued from page 9)

your mailing piece. The choice of words will depend on whether you want the advertising returned, forwarded or discarded. Check with your local postmaster for the best wording for your request to accomplish your results and to eliminate direct mail advertising waste.

Post Office Checking: You can have the post office check your mailing list before you send out any advertising. Or, you can use this checking for names and addresses that you cannot verify with other printed directories such as telephone or city directories.

Requirements for this type of checking of mailing lists are:

- Use cards similar in size to government post cards.
- Only one name and address listed on each card.
- Show the name and address on the lower right-hand corner of the card.
- Submit a minimum of 20 names for checking at one time.

When the names and addresses submitted have been checked and corrected, the post office will return the cards with the changes noted. Cost for this is five cents per name checked (not just for the names requiring corrections). A minimum of twenty cards must be submitted or there is a minimum charge of one dollar.

3. Use Best Postage Rate

The least expensive postage rate is not necessarily the best. However, there are some ways you can reduce your postage expense and save money on your direct mail advertising.

The first-class letter rate is 4¢ an ounce. This has priority for delivery and is forwarded at no extra cost for you or the addressee.

Third-class mail will reduce your postage bill at least 25% because it is delivered for 3¢. Generally it is delivered on days when the mail load is light and thus does not have as much competition for your customer's attention in his daily mail.

4. Try Bulk Rates for More Savings

When you make mailings of at least 200 advertisements at one time, you will save extra money with a bulk mailing permit. To qualify for this lower bulk mailing rate (2½¢ per piece), you need to:

- Buy a bulk mailing permit. (Cost for this permit is $20 a year from Jan. 1 to Dec. 31.)
- Mail at least 200 identical pieces each time. (There is no maximum number each time or during a year with one permit.)
- Separate mail by states and cities. (Some local postmasters ask for and appreciate separation by local routes or zones.)

You need to mail at least 4,000 advertisements during a year at the third-class bulk rate to break even on your permit fee of $20. Mailings over this minimum save you one-half cent per advertisement mailed to your customers.

5. Use Printed Permit on Envelope

When you hold a bulk mailing permit, you can save time and money on your direct mail advertising. A permit number is assigned to you by the post office. You have this number printed on the cards or envelopes you plan to use in your direct mail advertising.

You may have 1,000, 10,000 or a million envelopes or cards printed at one time with this permit number on them. If printed at the same time you print your return address on the envelope, there is usually no extra charge by the printer.

You do not have a large investment in postage stamps with the printed permit. Then, too, you save time and money by not having to affix the stamps to each mailing piece.

6. Use Printed Addresses

Addressing direct mail advertising takes time and costs money. When you use a mailing list, you will want to check some of the mechanical ways of addressing mail to reduce your costs.

When you are making mailings to rural customers, you can print the address on the mailing piece. For instance, you print the mailing address at the same time you print your permit number and return address on the advertisement. This reads: "Boxholder, Rural Route, Your City and State."

7. Use Government Post Cards

Some feed dealers have found government post cards to be valuable in controlling direct mail advertising costs. With this you have no card stock to buy (only the printing cost). Also, you do not have to affix stamps to each piece of mail. You can have your printer buy large sheets of post cards for printing. This will save on the number of times the printing press needs to run because several cards can be printed at one time then cut to individual card size.

If you use direct mail advertising in your feed and grain business, you will find some ways here that will help you make your advertising dollars do double duty instead of helping make up the postal deficit.

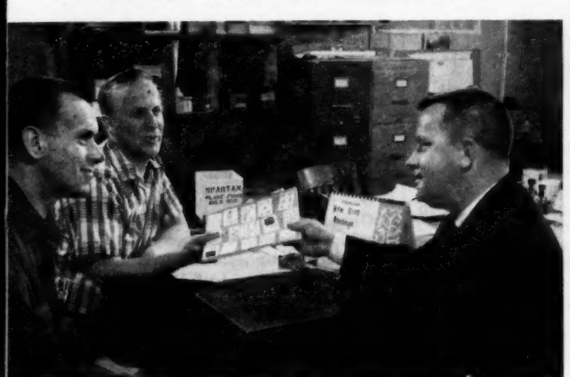
ENTOMOLOGIST DIES

LEXINGTON, KY.—Howard H. Jewett, retired entomologist at the University of Kentucky, died recently following a heart attack. Mr. Jewett, 74, had done extensive research in entomology since he came to the University in 1911. He was a member of the Entomological Society of America.

program should really help sales!"

1. "The SPM informational advertising program has made a terrific impact on the market. As an example, we've received requests for product information from thousands of large growers and influence people. It indicates to us that growers are becoming more and more interested in magnesium."

2. "Although our advertising is primarily informational, we use the seal in each ad to acquaint buyers with the sign that identifies fertilizer with Sul-Po-Mag. As you know the SPM seal is available in printing plates, proofs, stickers, or tags so you can take advantage of our Sul-Po-Mag promotion."



5. *"Sounds interesting, Bill . . . but could you leave this brochure with us? We would like to look it over and study your program in detail. I'm sure your materials may fit into our own advertising program."*

6. "Thanks for your time, Alf and Bob. I'll keep you informed on everything new in our program, but if you have any questions or would like to use some materials, just let me know."

By including Sul-Po-Mag as your source of magnesium and sulphate of potash in your mixed fertilizers, you'll profit from this hard-working sales promotion campaign.

HERE'S THE FULL LINE OF IMC POTASH PRODUCTS

Standard Muriate of Potash | Coarse Muriate of Potash | Granular Muriate of Potash | Sulphate of Potash | SUL-PO-MAG® double Sulphate of Potash-Magnesia

PRODUCERS OF LIVING MINERALS

26-59 R

POTASH DIVISION

INTERNATIONAL MINERALS & CHEMICAL CORPORATION

Administrative Center: Skokie, Illinois

FARM SERVICE DATA

EXTENSION SERVICE REPORTS

Ross P. Bowen, Toombs County, Georgia, farmer, follows a program of soil testing, use of recommended amounts of fertilizer and the planting of certified seed to produce outstanding yields, according to Hugh A. Inglis, agronomist of the University of Georgia Agricultural Extension service.

Last year, he pointed out, Mr. Bowen averaged 138 bu. of corn an acre on 14 acres to become a member of the Georgia 1,000 Bushel Corn Club. This corn was produced at a cost of 55¢ bu.

The college of agriculture agronomist said that Mr. Bowen followed recommendations of the Agricultural Extension Service in selecting Dixie 18 as the variety to grow and carried out good cultural practices. He planted the corn 9 in. apart in 42-in. rows and used 1,000 lb. of 0-12-12 fertilizer an acre at planting and sidedressed with 80 lb. of nitrogen an acre. Soil in the field was tested to determine fertilizer needs.

Mr. Bowen, who is a director of the Georgia Crop Improvement Association, produces certified hybrid seed corn, oats and peanuts. In the fall of 1958 he built a hybrid seed corn processing plant on his farm and does custom work in the plant under the approval of the Crop Improvement Assn.

★

The use of insecticides to control white grubs and other small animals that provide food for ground moles may be as effective as killing the moles themselves.

There are several long lasting soil insecticides that will kill these animals and deprive the mole of his favorite food. Alabama Polytechnic Institute extension entomologist W. A. Ruffin says that the ground mole's diet consists almost entirely of animal matter in the soil.

Since moles dig constantly for food, they expose roots, raise unsightly ridges about plants and through lawns, and lift young plants. Mice may frequently take over the mole's tunnel and do considerable damage.

White grubs are a favorite food of the mole, and Mr. Ruffin recommends controlling them with 2 lb. of Aldrin, Heptachlor, or Dieldrin or 4 lb. of chlordane. These may be applied as sprays, granules, or dusts or in fertilizer. Mr. Ruffin adds that the treatments are effective for three to five years.

According to Mr. Ruffin, an immediate reduction of moles shouldn't be expected after treatment. To be really effective, an area larger than the lawn or area that needs protection should be treated. Harpoon traps that are properly set are also recommended for controlling moles. However, this still won't get rid of grub damage which may be as great as the damage from the mole.

★

A lack of nitrogen or uneven application of nitrogen may be causing light green patches in oats, but such patches may also be caused by infestation of yellow-leaf virus, Dr. Luther L. Farrar, assistant plant pathologist at the Georgia Experiment Station, said.

"When the yellow-leaf infected plants are examined closely," Dr. Farrar said, "some leaves are usually yellow and green-striped or entirely golden yellow, and frequently leaves are twisted and curled. When oat heads of infected plants emerge, they are yellow and usually produce only a few oats."

Dr. Farrar explains that investigations conducted since the spring of 1957 indicate that yellow-leaf of oats is caused by a virus spread by aphids. "The insects feed on infected plants, and when the insects migrate to new plants, or are blown by strong winds, they carry the virus with them."

Dr. Farrar says the yellow-leaf has been observed most frequently on the Victorgrain variety of oats, but some also has been noted on Suregrain and Arlington.

According to the scientist, no control measures are recommended at present, since yellow-leaf apparently is not transmitted by seed, nor is it widespread.

★

Dr. James Grayson, Virginia Polytechnic Institute entomologist, after 10 years of research into insects' resistance to "bug killers," has concluded:

"Insects will develop resistance to any barrier, chemical or mechanical, which is used consistently to control them."

Dr. Grayson's work in the laboratory has been with three strains of the German cockroach. Two—with immunity to DDT and lindane—were developed at VPI. The third—a chlordane-resistant strain—was imported from Texas in 1951.

By constant exposure to the respective insecticides, these strains have developed high degrees of immunity, much like roaches found in many homes and stores.

Purpose of the research is to test new insecticides on the resistant strains and note their reactions. For instance, he said, "if someone develops an insecticide to combat roaches we feed it to our test insects which already have built up an immunity to other types of chemicals and we watch the reaction."

"We are trying to look ahead to anticipate new resistances and meet them before they are developed," he said.

Dr. Grayson caused quite a stir in 1951 when he announced VPI had developed roaches which literally could swim in DDT and live. That was the beginning of the DDT resistant strain which took 10 generations to breed.

Now, he says, in another six to eight years the roach will grow resistant to organic phosphates—the compounds which pest control specialists have been using since DDT became nearly "obsolete."

"Basic research's aim is to eliminate this brush-fire warfare," Dr. Grayson said. "Today we are lucky to stay one jump ahead of the insects as they develop new immunities."

Not only farmers, but also public health officials and housewives the world over stand to gain by pest control research of the type being done at VPI. Dr. Grayson said it must be expanded.

A small step has been taken in that direction at VPI where a second professional worker has been added to the project staff. He is Dr. D. G. Cochran, a new member of the entomology department. Graduate students will continue to shoulder a large portion of the day-by-day work, though.

What have been some of the findings of his research?

1. Resistant roach strains produce many fewer offspring than those without resistances.

2. Resistant strains tend to be smaller and weigh less.

3. Development is slower among resistant roaches.

From the above, Dr. Grayson has concluded that in an insecticide-free environment resistant roaches soon would find themselves absorbed by non-resistant types.

"We are a long way from finding conclusive answers to our problems, though," he said.

★

Lime is probably the cheapest plant food available and one of the best insurances for good crop production, according to Dr. W. L. Pritchett, soils technologist with the Florida Agricultural Experiment Station.

Applying limestone to soil that needs it has been called the first and most important step in restoring or maintaining soil fertility, adds Dr. Pritchett. The technologist says only a relatively small percentage of farmers use adequate amounts of lime to maintain soil reaction at a level best for plant growth.

In addition to neutralizing soil acidity, limestone plays a number of other roles in the soil. Dr. Pritchett says it is the cheapest source of calcium and magnesium, both of which are essential plant nutrients often deficient in Florida soils. Lime also promotes the availability of other plant nutrients and increases the efficiency of fertilizers.

"Liming may help to overcome toxic conditions in special cases where chemical residues have accumulated," says Dr. Pritchett. "The practice of liming, through its influence on the availability and uptake of plant foods by growing crops, may therefore be considered the cornerstone of efficient crop and livestock production," he adds.

Lime encourages favorable bacterial activity, such as nitrification, and improves the structure of some soils.

Dr. Pritchett warns that not all soils need liming. He cautions against the effect of over-liming. For an accurate check on the liming needs of soil, he recommends taking soil samples and having them tested.

★

EPTC, a chemical sold as Eptam 6E, shows promise as a product for controlling weeds in sweet potatoes, it was reported at the Georgia Experiment Station, where tests were conducted.

In the tests, chemical sprays were put on one to two days following transplanting of the sweet potato plants. In both the 1957 and 1958 trials, EPTC gave excellent control of weeds and, unlike some of the other chemicals tried, it caused no injury to the sweet potato plants, and did not reduce the yields.

However, it was pointed out that use of EPTC to control weeds in sweet potatoes is still on an experimental basis, and other facts must be learned before the product is recommended for use on farms.

★

Proper treatment of steep hillside pastures in the Eden Hills can more than double the amount of dry matter they produce.

That's what Timothy Taylor and his associates at the Kentucky Agricultural Experiment Station found during tests on the Eden Shale experimental farm in Owen County.

The proper treatment, they decided, includes seeding of legumes, moderate disking and enough fertilizer.

Mr. Taylor and his associates began their experiments by clearing one of the hillsides of bushes and briars. Underneath they found a fair stand of bluegrass.

One part of this field was untreated. It produced 3,347 lb. of dry matter in one season. Dry matter is 88% of the hay by weight.

Another section of the field got 60 lb. of phosphorus and 60 lb. of potash an acre. The yield on this plot was 3,783 lb. of dry matter.

On an area where 450 lb. of ammonium nitrate were added, in addition to the phosphate and potash, the yield went up to 6,186 lb.

The researchers also tried broadcasting lespedeza seed on an area that received 60 lb. of phosphate and 60 lb. of potash. This plot yielded 5,002 lb. of dry matter.

Then they tried drilling alfalfa on an undisked slope adding the same amounts of potash and phosphorus. There the yield was 6,084 lb. Mr. Taylor points out that the yield on this alfalfa plot was better than on the lespedeza plot and about as good as the plot on which ammonium nitrate had been added.

Where red clover was drilled into undisked pasture and potash and phosphate added, the yield was 6,843 lb. Seeding trefoil produced 4,077 lb.

These workers then tried moderate disking of some of the land. Moderate disking is defined as 40 to 60% disturbance of the existing sod.

When alfalfa was seeded and potash and phosphate added to disked land, the yield was 7,611 lb. Putting red clover and fertilizer on disked land produced 6,636 lb. Putting on trefoil produced 7,898 lb.

Mr. Taylor also tried tearing up the

FARMER HAS ADVICE FOR DEALERS

Just about everyone else has ideas to make buyers out of farmers; why not a word from the farmer himself? This is the question asked in Rural Marketing, a publication of Farm Journal, Inc., Philadelphia.

At a recent dealers' clinic, Farmer Earl E. Rogers, who runs a 360-acre cattle operation near Kirksville, Mo., got audience attention when he made the following suggestions to dealers:

- **Spruce up your place of business. Paint, keep it clean and attractive. Use demonstrations.**
- **Put better displays in the store. The farmer is used to self-service; he, too, makes impulse purchases.**
- **Welcome farmers with a smile. Often they aren't too talkative, but try to put them at ease. Talk about community affairs. Discuss the farmer's family and his hobbies.**
- **Have an area in your store where the farmer and his wife can relax. They may just sit, but more often they'd like to look over merchandise at leisure.**
- **Convince the farmer you know your products. This is especially important if you plan to sell a higher quality product than he first intended to buy.**
- **Don't try high pressure selling. Farmers recall occasions where they've been taken in by the fast-spoken word.**
- **On quantity purchases the farmer believes he rates a small concession on price.**

sod completely with a disk. When alfalfa was planted with fertilizer in such a field, the yield went up to 8,028 lb., but yields of red clover and trefoil plots did not increase much. He decided moderate disking was just as good as heavy disking.

The hillsides used in the experiments were 30% slopes, about the steepest slope a tractor can work.

★

Total cotton yields were the same when nitrogen was applied or as sidedressing. But more cotton was picked at first picking where nitrogen was applied preplant.

Those were the results of research to throw new light on when nitrogen should be applied on cotton. The tests were conducted in 1957 and 1958 on Olivier silt loam at the University of Arkansas' Cotton Branch Experiment Station near Marianna.

Olivier is a medium-textured soil with an impervious subsoil that hinders internal drainage. "These results are not necessarily indicative of what might be expected on very sandy soil or on heavy clay soil," emphasized Dr. G. W. Hardy, assistant agronomist.

Urea and ammonium nitrate were the nitrogen carriers applied at the rates of 60 and 120 lb. of nitrogen an acre. No difference was noted in the performance of the two fertilizers.

Preplant application was made under the bed in the usual manner by placing the fertilizer in the water furrows and rebedding. Sidedressing nitrogen was applied half at thinning and half at first bloom.

The experiment indicates that the advantage of applying nitrogen preplant is that more cotton can be picked early, Dr. Hardy asserted. Although sidedressed nitrogen produced as much total cotton as that applied preplant, a late season drouth or early frost might have cut yields of later maturing sidedressed cotton.

Dr. Hardy concluded that because of the possibility of adverse weather conditions in the fall and to assure greatest possible amount of high quality cotton, a grower would benefit by applying part of the nitrogen preplant.

★

Prevention is the key when it comes to controlling armyworm infestations, says Dr. J. O. Rowell, entomologist at Virginia Polytechnic Agricultural Institute Agricultural Extension Service.

The armyworm is showing up in several areas of Virginia now, Dr. Rowell reports, and this is an excellent time of the year to try to locate the over-wintering areas and determine whether the armyworms are beginning to migrate to crops and pastures.

Their migration can be controlled by the use of insecticide barriers around over-wintering areas, or if the armyworms are already moving from these areas, by the use of an insecticide barrier to protect the crops or pastures. Toxaphene or DDT barriers, 5 to 10 ft. wide, will do a good job. The larvae are killed trying to pass through the barrier.

When the larvae have already become widespread in small grain and seedling corn, DDT or toxaphene sprays or dust can be applied. Neither of these insecticides, however, can be used on pastures to be grazed by dairy cattle or cattle being finished for slaughter. Nor should the insecticides be used on any forage crop to be ensiled or otherwise fed to dairy or beef cattle being finished for slaughter. There is no recommended method for using insecticides on pastures or on ensilage corn or in forage crops for dairy cattle.

Dr. Rowell also reports many inquiries from farmers about alfalfa weevil damage being done just before harvest time for first cutting. The farmers are wondering whether the crop should be sprayed before or after the first cutting is removed. It has been more satisfactory to destroy the larvae on the first cutting, even though it means delaying harvest for seven days after treatment, Dr. Rowell says. It is very hard to control the larvae on the stubble after the first cutting has been removed.

LSU to Build New Feed, Fertilizer Facility

BATON ROUGE, LA. — A new $648,870 feed and fertilizer building is to be constructed on the campus of Louisiana State University which will be ready for occupancy by fall of 1960.

According to Dr. Daniel Borth, dean of administration, the facility will be located on South Stadium drive. It will be 230 ft. long, completely air conditioned, and will house laboratories and offices of LSU's feed and fertilizer laboratory, the university's soil and testing laboratory, the seed division of the state's agriculture department and offices of the state soil conservation committee.

Dr. John J. Mikell, assistant director of the LSU agricultural experiment station, said the new structure will enable the labs to give greater service at a time when there is an increasing demand for testing soils, seeds and fertilizers.

Dr. Mikell said a complete new biological section will be used for testing germicides, disinfectants and for making bioassays of certain growth factors such as vitamins, amino acids and drugs.

The new facilities will permit LSU to make tests for nitrogen and organic matter, for the first time.

SALES TOOLS

(Continued from page 9)

kind of work, Mr. Hanson uses one full time laborer and a part-time high school student.

He has never considered hiring an assistant manager or outside salesman. He prefers that farmers make the store their town headquarters. Because of this he spends practically all his time at the store. Even driving downtown two or three times a day for coffee might lose several sales.

"In this business, the farmer needs advice and service," said Mr. Hanson. "Things are changing so fast and farming is becoming so technical, he must have help in keeping up. So if the store manager will stay abreast of new developments and make an earnest attempt to help his customers make more money, he won't need to worry too much about price-cutting. Farmers don't mind paying a legitimate price, but they want to be sure of what they're getting."

In addition to the 20,000 acres of irrigated land in the county, the Stanton Chemical & Seed Co. is now selling to dozens of farmers in Midland County to the southwest. The firm is becoming known as the farm chemical headquarters for a large area. Any new products mentioned in the magazines will likely show up at the store. The office is filled with posters, bulletins and pamphlets about various new things.

Mr. Hanson works closely with county agents, agronomists and manufacturer representatives, but most of all he works with farmers. If one farmer turns up a good idea, Mr. Hanson tries to pass it on to someone else. This has spread until now when a cotton grower wants to find out something, he immediately drives down to the store and asks about it. And nine times out of ten he will find the youthful manager loaded with information and willing to share it.

College Agronomy Club Hosts Soil Judging Contest

RALEIGH, N.C. — The Agronomy Club of North Carolina State College was host to the participants of the Soil Judging Contest sponsored by Region II of the ASA. The contest was held in Raleigh May 9.

Participating in the contest were teams from Kentucky, Georgia, Virginia and Tennessee. The teams assembled in Williams Hall on the campus of North Carolina State where they were welcomed by Dr. D. W. Colvard, dean of the school of agriculture; Dr. J. W. Fitts, head of the soils department; Dr. T. J. Mann, acting head of the department of field crops, and James W. Hendrix, president of the Agronomy Club.

The group then moved to the judging area where an explanation of the score card was made and some practice judging of profiles was held. The group then was served a barbecue dinner sponsored by the National Plant Food Institute after which the judging contest was held. The winner of the contest was the team entered by Virginia Polytechnic Institute from Blacksburg.

SEED FIRM SOLD

HURRAH, WASH. — Sale of the Andrews Seed Co. plant here to Northrup King & Co., seed dealer, is announced. The new owners will take possession June 30.

OVER THE COUNTER

By Emmet J. Hoffman
Croplife Marketing Editor

The best way to sell more of your products to farmers is to let each farmer see the results produced right on his own farm, says Winston A. Way, extension agronomist, University of Vermont.

"Research and station demonstrations can never duplicate the wide variety of situations experienced by farmers," says Mr. Way. "Therefore, you should encourage them to demonstrate your products to their own satisfaction."

The strip method is best for products used with crops. Urge farmers to try this method. Researchers resort to many small replicated plots for their precise work. Any farmer can do almost as well on long strips, if some care is taken to avoid wet spots, dead furrows and other abnormal areas.

A strip demonstration of various fertilizer rates involves no change in spreader settings, no extra labor and no extra fertilizer. What could be easier?

Here's a plan that may double your sales to one particular farmer. While fertilizing a field, a farmer need only skip a spreader width and go over the next strip twice. Such a demonstration might well show him that he's only using one-half enough fertilizer and the dealer may double his sale to the farmer the next time.

If the farmer's normal rate is quite low, say 200 lb. per acre, he might well put in a triple rate, or a four-time rate with even better results. These additions will of course take more material, but wouldn't it be worthwhile for him and you?

Seed and crop demonstrations are effective, too. Dealers should encourage their customers to try new varieties and new materials. However, the dealer should always insist on a comparison in the same field so he can see results. If the farmer buys commercial timothy, sell him some Climax for comparison, Mr. Way advises dealers in his state. DuPuits, Vernal and Narragansett make a nice demonstration. A strip of hay-type trefoil (Mansfield or Viking) and a strip of alfalfa in the center of a red clover field might encourage their use. When comparing corn, suggest one earlier and one later variety than he intends to use on his field.

Demonstrations should be well marked. Everyone has short memories. Customers are no exception. Caution them to drive a small stake in the fence row opposite strip boundaries at each end of the field, mark a fence post, or tie a rag on a wire. Use a jackknife to whittle the rate or variety initial in the wood. No fertilizer could be marked 0, normal rate 1X, double rate 2X and triple rate 3X.

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WEED OF THE WEEK

Mr. Dealer—Cut out this page for your bulletin board

Curled Dock

(Rumex crispus)

How to Identify

This plant, also known as sour dock and yellow dock, grows from 2 to 5 ft. tall. Stems are smooth, erect, branched above, and have swollen joints or nodes. Leaves are oblong, from six to 12 inches long, of a dark green color and with wavy edges. Edges of the leaves are slightly toothed. Flowers are small and arranged in a panicle on the top of the plant and in clusters around the stem. Seeds are reddish-brown, shiny and triangular. The plant has a large, deep taproot and, in the fall, the plant produces a large rosette of leaves as illustrated.

Habits of Plant

Curled dock is a perennial, reproducing by seeds. It is found in low areas, fields, pastures, waste places, roadsides and fence rows. The seed is frequently found in clover and seeds of other grain crops. The plant seeds July to October.

Damage Done by Curled Dock

These plants are most damaging to tame pastures and meadows, sweet clover and such crops as remain on the same field for two or more years. It is particularly harmful when the crop is havested for seed, since dockseed is difficult to separate from some crops, particularly clovers. Some state laws make it mandatory for labels to state when more than one dock seed per thousand is in a package of crop seeds; others make it necessary to state on the seed label the number of seed of dock per pound.

Control Methods

Chemical herbicides will control this weed, and cultural methods, such as draining low spots, spading or grubbing out scattered plants, and mowing or plowing dense infestations before the seeds are set are also indicated. The weed does not persist in fields regularly plowed.

Illustration of Curled Dock furnished through courtesy of Dow Chemical Co., Midland, Michigan.

TVA

(Continued from page 1)

learn how to ammoniate superphosphates to take advantage of the economics of low cost ammonia to supply nitrogen to mixed fertilizers. He described in detail some of the processes developed in TVA laboratories to do the job.

In discussing the escape of nitrogen in this connection, he said that economic losses include the actual value of the nitrogen lost, the shrinkage in weight of the product, the overage in phosphate and potash for which the manufacturer does not get credit and possible penalties and unfavorable publicity brought about through deficiencies found by state laboratories. "These economic losses have been estimated to amount to several million dollars a year," he said.

Continuing the discussion on loss of nitrogen, A. B. Phillips, chief, Process Engineering Branch of TVA, talked on the loss of nitrogen in making a 12-12-12 mixed fertilizer. He said that these losses are often puzzling, but studies have shown some factors that may enter into such losses.

These include the acid feed rate which was found in pilot plant studies to have a considerable bearing on loss of nitrogen; the production rate in relation to the tons per hour of ammoniation solution distributor and the length of the sparger introducing the solution; the effect of sulfuric acid concentration on the decomposition of ammonium nitrate and the effect of temperature on such decomposition.

Mr. Phillips gave the following suggestions to reduce loss of nitrogen when making high-nitrogen grades such as 12-12-12:

1. "Use distributors that extend throughout the full length of the ammoniator.

2. "Use distributors designed to give maximum distribution of liquids. Distributors should be slotted or should contain a large number of small holes rather than a few large ones.

3. "Distributor and supporting members should be of streamlined design to minimize interference with the rolling action of the bed.

4. "Formulations and operating conditions should be adjusted to avoid overgranulation to the extent that mixing would be impaired.

5. "Distributors should be inspected and cleaned frequently. They should be replaced before the openings are enlarged to the extent that the distribution pattern is changed. The acid distributor requires particular attention as it is subject to the worst corrosion."

Dr. E. D. Schall, Purdue University biochemist, described results of numerous tests with 12-12-12 grade fertilizers made by several manufacturers. In many cases, he said, the nitrogen percentage was low, P_2O_5 and K_2O content were higher than necessary.

Subsequent work in Purdue laboratories showed the influence of heat in nitrogen losses, as well as the influence of other chemical combinations in reducing the nitrogen content. The addition of chloride, Dr. Schall said, accelerates losses greatly. The addition of sulfate, on the other hand, apparently reduces losses.

Wednesday's sessions included talks on the production of high-nitrogen grades in the continuous ammoniator; the use of 30-10-0 ammonium phosphate nitrate in the production of 20-10-10 granular fertilizer, and the production of granular no-nitrogen grades.

R. D. Young, Process Engineering Branch, TVA, described production of high-nitrogen grades of fertilizer in the continuous ammoniator. He said the "inverse ratio" of 2:1:1 is becoming popular for pasture land fertilization and described in detail the production of such grades.

Use of ammonium sulfate and ammonium nitrate was discussed, as were tests made to evaluate bag and bulk storage properties of 16-8-8 and 20-10-10 grades. Mr. Young indicated that no particular problems appeared in this connection, but the addition of a coating agent in the material brought improved storage properties under moist conditions.

Grades of just the opposite content were discussed Wednesday afternoon. Mr. Young addressed the group on production of granular no-nitrogen grades such as 0-14-14; 0-20-20 and 0-25-25. The speaker also described the use of calcium metaphosphate in production of 0-30-30 and 0-40-20, with charts and graphs to illustrate.

Data indicated satisfactorily low rates of corrosion for mild steel, certain types of stainless steel and aluminum when phosphoric acid was used. However, only stainless steel appeared to be suitable when sulfuric acid was used, Mr. Young said.

A full discussion of liquid fertilizer production was on the agenda for Thursday morning, with A. V. Slack of the TVA engineering staff in charge. He presented a paper, "Status of Liquid Mixed Fertilizer Technology," and George Stanford, TVA agronomist, discussed the comparative agronomic value of liquid and solid fertilizers.

Other discussions on this phase of the conference were application equipment, liquid fertilizers from superphosphoric acid, caustic potash and a panel on the use of wet-process phosphoric acid in production of liquid mixed fertilizers. A paper on salt-suspension fertilizers was presented by H. K. Walters, Jr.

Following the discussions of various production techniques, the conventioneers were taken to the pilot plant building and shown the processes in actual production, with the opportunity of inquiring from engineers further details of the processing question.

NEW WAREHOUSE

SACRAMENTO—A new seed, insecticide and fertilizer warehouse has been completed at the plant of the Chico Bean Growers, northwest of Chico. The 3,000 square foot structure, served by a rail spur, will permit on the spot purchases of supplies by the organization's members.

Phillips Announces Prices For Anhydrous Ammonia

BARTLESVILLE, OKLA.—A continuation of the $88 per ton price for anhydrous ammonia through July, 1959 was announced by Phillips Petroleum Co. for shipments in transport truck and carlots f.o.b. its Houston, Texas and Etter, Texas plants.

To encourage off-season use and storage of fertilizer, during the months of August and September, 1959, the price will be $84 per ton; and during October, November and December, 1959, the price will be $86 per ton. During January through July, 1960, the price will be $88 per ton.

Iowa Custom Spray Firm to Expand

MASON CITY, IOWA—Heimbuch Implement Co. here has purchased the land across the road from its plant for enlargement of facilities for spraying, spraying equipment and chemicals, it is announced by Robert Heimbuch. The company has been in the same location for 19 years. Some 12,000 to 15,000 acres have been sprayed by Heimbuch's this season. A line of general chemicals is sold, both wholesale and retail. Mr. Heimbuch operates an airplane to speed up service.

Books on Pesticides

THE GARDENER'S BUG BOOK (1956)

Dr. Cynthia Westcott

The Complete Handbook of Garden Pests and their control. Information, scientifically accurate but easy to read on 1,100 insects, mites and other animal pests that attack trees, shrubs, vines, lawns, flowers, fruits and vegetables in home gardens. Illustrations in full color. Control measures combine the latest in chemical developments with time-honored cultural measures. Helpful to all who serve the general public and to truck farmers and fruit gardeners. 579 pages, cloth bound $7.50

HANDBOOK OF AGRICULTURAL CHEMICALS —Second Edition

Lester W. Hanna, Agricultural Enterprises, Forest Grove, Ore.

As the title implies, this book contains broad information and tables on not only the chemical products themselves, but also on toxicity, residues, registration, terminology and emergency treatments. A fold-out chart gives compatibility data on numerous materials for formulators. Information on fertilizers includes soil elements, trace minerals, and application techniques. Descriptive material is also presented on fumigants, fungicides, herbicides, systemics, growth modifiers, livestock chemicals, rodenticides, and antibiotics. Information on materials and techniques is written fully with illustrations and tables. 490 pages..... $5.95

INSECT PESTS OF FARM, GARDEN and ORCHARD—Fifth Edition (1956)

Leonard M. Peairs and Ralph H. Davidson

A standard text for 44 years. Includes insects affecting grasses, grains, cotton, legumes, vegetables, flowers, fruits, stored products, household goods and domestic animals. Contains a new chapter on insecticide formulations, spray mixtures, application equipment, etc. Material on forty new pest species added, including drastic changes in the illustration. 661 pages $8.50

DDT and NEWER PERSISTENT INSECTICIDES

T. F. West and G. A. Campbell

The first and major part of book is devoted to the physical and chemical properties, manufacture, formulation and applications of DDT. The second part deals with other chlorinated hydrocarbons whose insecticidal properties have been discovered recently and compares these new insecticides with DDT. The preparation of aqueous suspensions, solutions, emulsions, and dusts containing DDT, the compatability of DDT with other insecticides, fungicides and additions are covered in detail. Contains dozens of tables on the solubility of DDT in various solvents, the catalytic activity of accessory substances in the presence of DDT, analogues of DDT, the comparative toxicity, hydrolysis and solubility of DDT analogues, the toxicity of DDT for almost all important insects, etc. Many illustrations $8.50

PESTS OF STORED GRAIN AND GRAIN PRODUCTS

Richard T. Cotton, Stored Product Insect Section, U.S. Department of Agriculture, Washington, D.C.

Dr. Cotton's valuable book is full of practical up-to-date information on the problems of insect and rodent contamination. Some of the main topics covered are: methods of detecting contamination in cereal from rodents, birds and insects; prevention and control of insect infestation in grain; new methods of storage; methods of sanitation in grain storages and processing plants; the latest information on fumigation; heat sterilization; and protection of stored seed. This book is concise, readable, completely indexed and includes over 100 figures and illustrations. 306 pages, 8½x5½", photo offset, illustrated, cloth bound.... $4.00

METHODS OF TESTING CHEMICALS ON INSECTS—Vol. I

Harold H. Shepard, chief, Agricultural Chemicals Staff, Commodity Stabilization Service, U.S. Department of Agriculture, Washington, D.C.

This is Vol. I of a proposed three-volume study. It describes methods of studying the effects of chemicals on the physiology of insects. Also covered are general techniques for applying chemicals to insects. It includes laboratory screening methods for determining the killing efficiency of insecticidal sprays, dusts and fumigants. Its 14 chapters are authored by prominent entomologists from USDA and State Experiment Stations. 355 pages; 8½x5½" photo-offset, cloth bound $5.00

THE CHEMISTRY AND ACTION OF INSECTICIDES

Harold H. Shepard, Entomologist, U.S. Department of Agriculture, formerly Associate Professor of Insect Toxicology, Cornell University.

Treats the chemistry of insecticides, the history of their use, their commercial importance here and abroad, the nature of the major uses, the influence of environment on effectiveness. Materials are arranged according to their chemical relationships. Two chapters relating to organic compounds largely new as insecticides. Illustrative data in form of tables, and a convenient appendix of equivalents arranged for practical use in the field. 504 pages..... $8.00

ADVANCES IN PEST CONTROL RESEARCH—Vol. 2

Edited by R. L. Metcalf, University of California, Citrus Experiment Station, Riverside, Cal.

This book, an annual series, treats pest control as a distinct discipline, discussing chemical, physical and biological methods from the common viewpoint of the basic principles involved and applying them to the control of weeds, fungi, bacteria, insects—all organisms which compete with man for his food supply, damage his possessions, or attack his person. Each annual volume contains chapters contributed by outstanding scientists having intimate knowledge of various pertinent topics within the field, presenting not only comprehensive reviews of recent advances but also critical evaluation of new developments and concepts. This volume continues the same plan which won immediate acceptance for the series. In eight chapters, a group of experts present and interpret recent advances in subjects ranging from the innate toxicity of fungicides to isotope dilution techniques and the spread of insecticide resistance, 1958; 434 pages, 110 illustrations, 43 tables $12.50

INSECT, FUNGUS AND WEED CONTROL

Dr. E. R. de Ong

The information is grouped according to field of application rather than to chemical composition or nomenclature. Chapters on insecticide label, seed disinfectants, herbicides, forest insects and diseases, livestock insects, and the pests found in household and industry. Fumigation of warehouses, residual sprays and preservatives for fruits, vegetables and wood products are covered. An up-to-date guide on pest control with the needs of operators, agricultural and structural specialists carefully considered. Shippers and warehouse personnel will find the book useful $10.00

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Bumper Corn Yields Aided by Fertilizer

BLACKSBURG, VA.—Good cultural practices and liberal use of fertilizer have given J. T. Burton, Halifax County farmer, bumper yields of corn silage. C. L. Hall, county agent in Halifax, described Mr. Burton's methods as follows:

He planted on good soils that are well-adapted to corn production, usually a field in a good crop rotation which calls for plowing down red clover in the fall. Although lime has been used in the rotation, another soil test is made and lime applied as needed well before planting time and worked into the soil. He spreads manure on the land during winter, and uses 400 lb. of 10-20-20 fertilizer per acre—300 lb. worked into the soil before planting and 100 lb. in bands below the seed at planting time.

Mr. Burton uses recommended hybrids, planting his seed 10 in. in the drill and 1½ in. deep in rows 3½ ft. apart. He makes three shallow cultivations in rapid succession and when the corn is about knee-high he sidedresses with nitrogen at the rate of 95 lb. per acre.

Mr. Hall noted that at harvest time last summer the volume of silage was so great that the tractor had to move at reduced speed to keep the harvester from choking down. Twenty tons of silage per acre was the estimate and two 80-ton silos were filled from an area less than half that required some years ago. Had the corn been left for grain, Mr. Hall says, it would have been considerably more than 100 bu. per acre.

PASTURES SUFFER

STATE COLLEGE, MISS. — Pastures suffer more from lack of fertilizer in Mississippi than any other crop, according to W. R. Thompson, extension agronomist, Mississippi State University

Five Named to Arizona Pest Applicator Board

PHOENIX, ARIZ.—One reappointment and four new appointments to the Arizona State Board of Pest Control Applicators have been announced.

The agency controls and regulates crop dusting and spraying operations of all kinds, including aerial application of insecticides.

Reappointed for a term expiring April 1, 1962, was Dr. Laurence A. Carruth, entomologist at the University of Arizona, Tucson.

New appointments: Virgil Koenig, Casa Grande, for a term expiring April 1, 1961, succeeding Charles Moody of Coolidge; Arnold A. Mast, Phoenix, for a term expiring April 1, 1961, succeeding James L. Savage, Casa Grande; Carl Sato, Mesa, for a term expiring April 1, 1962, succeeding William T. Elliott, Eloy, and Orval F. McVey, Yuma, for a term expiring April 1, 1962, succeeding A. P. Rowd Sanders, Tempe.

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Vermont Spraying Up, But Still Not Enough, University Scientist Says

BURLINGTON, VT. — Crop spraying by Vermont farmers for weed and insect control has increased tremendously during the past six years but still isn't as extensive as it ideally should be, reports a University of Vermont scientist.

Dr. Theodore R. Flanagan, assistant professor of agronomy, says the total acreage sprayed in Vermont has climbed from less than 1,000 acres to more than 12,000 acres during the six years covered.

This doesn't include such items as orchards, the number of lawns sprayed, the amount of poison ivy sprayed or the amount of brushland, fencerows, roadsides and the like sprayed by farmers.

A breakdown by Dr. Flanagan shows that the acreage sprayed last year amounts to 1.24% of the total crop acreage. He said the "ideal goal" is one-quarter of the land—and that on the present basis, farmers are reaching only 5% of this objective.

"The maximum area of land we expect to be sprayed annually for weeds and insects would be 250,000 acres of hay, pasture and cropland," he said.

Cold Weather Delays Idaho Crop Development

BOISE, IDAHO — Cold spring weather is delaying development of Idaho crops and causing scattered frost damage, reports the U.S. Agriculture Department and Weather Bureau.

Particularly hit were crops in southcentral and eastern Idaho.

"Frost damage to beets in the south-central area was reported. There also was some frost damage to alfalfa at higher elevations," the agencies reported.

Prunes and sugar beets in the Emmett area were damaged by hail during the week ending May 23.

Aphid infestation in alfalfa was heavy in some areas of southwestern Idaho, the crop report said. Showers proved beneficial to crops in the area, but below normal temperatures delayed growth of beans, corn and other warm season crops. Growth of peas, potatoes and sugar beets was satisfactory in the area.

In northern Idaho growth has been slow for spring planted grain crops. Winter grains are good.

Pea aphids were reported increasing in the south-central Idaho area, particularly around Twin Falls and Burley. The insects also are causing damage to alfalfa. Growth of most crops in the area was slow. Poor stands of some early planted corn caused some replanting.

Stands of spring grain were reported generally good in eastern Idaho, with a few spotty stands. Soil moisture supply is still critically low for some dry farm areas, though a few areas in eastern Idaho received appreciable amounts of much needed rain. Generally rainfall was light in most sectors of the area.

Two, Three Fertilizer Applications Being Used By Texas Cotton Growers

STANTON, TEXAS—Many cotton farmers in this area are now putting down their fertilizer in two or three applications instead of just once before planting. This spring they put on the phosphorus before planting, and are now sidedressing with nitrogen. While this may increase the cost, most farmers say the results in crop growth are more immediate.

Another trend has been toward the use of potash, which is now being used for the second year. The average rate is about 100 lb. per acre for irrigated cotton.

Fertilizer on dryland cotton has been used only sparingly, though farmers who used it in 1958 report slight increases in yield.

Widespread Use of Fertilizer on Grass Predicted by Texan

SINTON, TEXAS — Fertilizing grass may some day become almost as common as applying it to row crops, if field tests are any indicator.

Dr. C. L. Curlee, an authority on fertilizers and soil treatment, ran an experiment on his farm last year by fertilizing Angleton bluestem grass. Clipping results showed that fertilized plots produced 57,030 lb. per acre as compared to 21,280 lb. per acre for unfertilized grass.

He has long maintained that grass will respond to fertilizer and it is a practical way of improving the soil. On the plots tested, Dr. Curlee used several types of fertilizer containing nitrogen, phosphorus and potash. The average cost was about $16.95 per acre. The increase in dry weight of the fertilized grass amounted to over six tons per acre.

He says the use of fertilizer is becoming more widespread each year in the Southeast, and cited one Georgia county where agricultural income increased $3.75 million a year as a result of farmers using fertilizer.

WACA to Sponsor Regional Meetings

SAN JOSE, CAL.—Western Agricultural Chemicals Assn. will sponsor a series of three regional agricultural meetings in California next fall, according to C. O. Barnard, executive secretary.

The first—"New Pesticides Review for Central California"—will take place Sept. 10, at the Fresno Fairgrounds. The meetings will attempt to educate farmers, farm managers and supervisors, pesticides salesmen and others who give pesticidal advice with authoritative facts about new insecticides and new weed killers now in commercial production.

Cooperating agencies will be the California Farm Bureau Federation, the agricultural extension service and the experiment station of the University of California and the California Department of Agriculture. Farm advisors and research and extension specialists will relate usage of the new pesticides either to a major crop, or to a group of the major crops, grown in central California, with emphasis on specificity and alternative treatments to offset insect resistance and other limiting factors. A special presentation by an official of the California Department of Agriculture will be important to every person in the audience.

Colorado Farmers In Full-Scale 'Hopper War

DENVER—State farmers are waging full-scale war against grasshoppers in parts of Morgan, Adams and Weld counties.

Alvin Lesser, Adams County agricultural agent in Brighton, said 100,000 acres in Adams and Weld counties are lined up for aerial spraying to combat hoppers. Some 12,000 acres already have been sprayed.

Chester Fithian, Morgan County agent, said from 10,000 to 12,000 acres had been sprayed in scattered parts of his district. A poison bait machine was to go into operation this week.

None of the farmers have yet taken advantage of the state's pest district organization procedures.

"Too much red tape," one farmer said.

Mr. Lesser said that between 10 and 15 planes are flying daily, weather permitting, on hopper spraying operations. He felt the aerial and bait programs were "getting real good results."

The infested areas were the path of migrating hoppers last fall.

Not Enough Nitrogen Restricts Cotton Output

TIFTON, GA.—Inadequate use of nitrogen is restricting cotton production on many farms in Tift County, according to William H. Pool, county agent.

The agent said that nitrogen always has been one of the first limiting factors in cotton production. He said it is deficient in virgin soils and does not accumulate from fertilizer applications, and therefore, "nitrogen will always remain an important fertilizer problem."

Mr. Pool said the cotton plant must take up about 100 lb. of actual nitrogen per acre to produce the first bale of lint, and each succeeding bale requires about 30 lb. more nitrogen. Therefore, present application rates of nitrogen must be increased where high cotton yields are expected.

Mr. Pool said the general nitrogen recommendation for cotton is 60 lb. per acre, but he added that many farmers in Georgia are using up to 90 lb. of actual nitrogen per acre.

He said these leading cotton farmers are also taking advantage of improved methods of insect control, soil acidity, nematode control, and are adding sufficient phosphate and potash to the soil.

The agent added that "only the cotton farmers who follow the best production practices known, including applications of adequate nitrogen, can hope to surmount the obstacles they face today."

OPEN MIDWEST OFFICE

DAYTON, OHIO — The National Northern Division of American Potash & Chemical Corp. has opened a Midwest area office to be headed by Earl J. White, Jr., at 70 Boundbrook Drive, Dayton, according to an announcement by John A. Haynes, sales manager of the National Northern Division.

County Agent Wins American Cyanamid Award

UNIVERSITY PARK, PA. — Hunger is still the world's basic problem, and county agricultural agents hold a key to its solution, Dr. J. T. Thurston, New York, declared at a dinner honoring R. H. McDougall, Butler, Pa., for distinguished service to agriculture.

Mr. McDougall, county agent of Butler County and dean of Pennsylvania's agents in length of service, received American Cyanamid Co.'s farm service award for the 12-state region of northeastern U.S.

Eric A. Walker, president of the Pennsylvania State University, made the presentation. The award to Mr. McDougall, he said, also "brings honor to the university. This recognition by industry is an evidence Penn State is achieving its goal of service to the people of Pennsylvania."

Now! A new form developed by Penick gives full protection at lower cost!

Now . . . more than ever . . . there's no need to abandon your moth-control program during the vital last 30 days of the season!

Exempt under the Miller Bill, Ryania can be sprayed until the day the fruit is gathered . . . **without fear of harmful residues.**

And in Penick's new, improved form . . . RYANICIDE 50 W.P. . . . Ryania adds **new economy** to these well-known recognized advantages:

- ***selective* control of codling moth . . . including resistant strains!**
- **encouragement of beneficial insect species . . . lowered mite populations!**
- **non-phytotoxic . . . will not harm fruit finish!**

RYANICIDE 50 W.P. has proved completely successful in extensive actual-use tests.

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Farm Chemical & Insecticide Division

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Bumper Corn Yields Aided by Fertilizer

BLACKSBURG, VA.—Good cultural practices and liberal use of fertilizer have given J. T. Burton, Halifax County farmer, bumper yields of corn silage. C. L. Hall, county agent in Halifax, described Mr. Burton's methods as follows:

He planted on good soils that are well-adapted to corn production, usually a field in a good crop rotation which calls for plowing down red clover in the fall. Although lime has been used in the rotation, another soil test is made and lime applied as needed well before planting time and worked into the soil. He spreads manure on the land during winter, and uses 400 lb. of 10-20-20 fertilizer per acre—300 lb. worked into the soil before planting and 100 lb. in bands below the seed at planting time.

Mr. Burton uses recommended hybrids, planting his seed 10 in. in the drill and 1½ in. deep in rows 3½ ft. apart. He makes three shallow cultivations in rapid succession and when the corn is about knee-high he sidedresses with nitrogen at the rate of 95 lb. per acre.

Mr. Hall noted that at harvest time last summer the volume of silage was so great that the tractor had to move at reduced speed to keep the harvester from choking down. Twenty tons of silage per acre was the estimate and two 80-ton silos were filled from an area less than half that required some years ago. Had the corn been left for grain, Mr. Hall says, it would have been considerably more than 100 bu. per acre.

PASTURES SUFFER

STATE COLLEGE, MISS. — Pastures suffer more from lack of fertilizer in Mississippi than any other crop, according to W. R. Thompson, extension agronomist, Mississippi State University

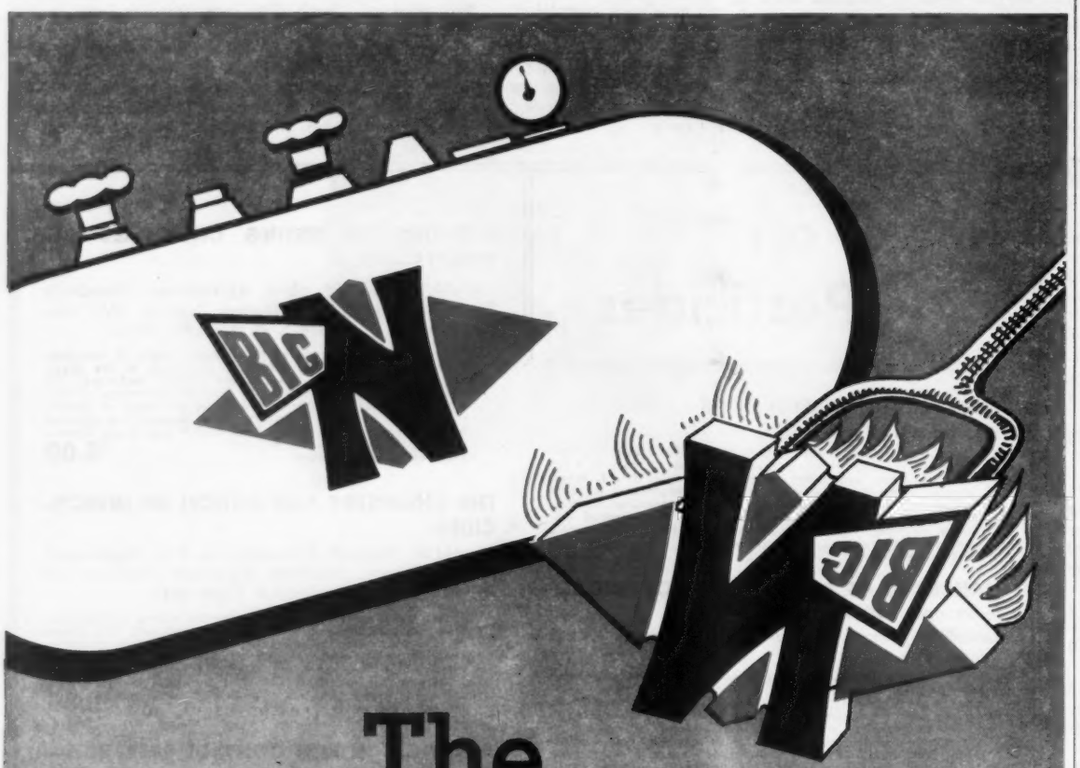
Five Named to Arizona Pest Applicator Board

PHOENIX, ARIZ.—One reappointment and four new appointments to the Arizona State Board of Pest Control Applicators have been announced.

The agency controls and regulates crop dusting and spraying operations of all kinds, including aerial application of insecticides.

Reappointed for a term expiring April 1, 1962, was Dr. Laurence A. Carruth, entomologist at the University of Arizona, Tucson.

New appointments: Virgil Koenig, Casa Grande, for a term expiring April 1, 1961, succeeding Charles Moody of Coolidge; Arnold A. Mast, Phoenix, for a term expiring April 1, 1961, succeeding James L. Savage, Casa Grande; Carl Sato, Mesa, for a term expiring April 1, 1962, succeeding William T. Elliott, Eloy, and Orval F. McVey, Yuma, for a term expiring April 1, 1962, succeeding A. P. Rowd Sanders, Tempe.



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Vermont Spraying Up, But Still Not Enough, University Scientist Says

BURLINGTON, VT. — Crop spraying by Vermont farmers for weed and insect control has increased tremendously during the past six years but still isn't as extensive as it ideally should be, reports a University of Vermont scientist.

Dr. Theodore R. Flanagan, assistant professor of agronomy, says the total acreage sprayed in Vermont has climbed from less than 1,000 acres to more than 12,000 acres during the six years covered.

This doesn't include such items as orchards, the number of lawns sprayed, the amount of poison ivy sprayed or the amount of brushland, fencerows, roadsides and the like sprayed by farmers.

A breakdown by Dr. Flanagan shows that the acreage sprayed last year amounts to 1.24% of the total crop acreage. He said the "ideal goal" is one-quarter of the land—and that on the present basis, farmers are reaching only 5% of this objective.

"The maximum area of land we expect to be sprayed annually for weeds and insects would be 250,000 acres of hay, pasture and cropland," he said.

Cold Weather Delays Idaho Crop Development

BOISE, IDAHO — Cold spring weather is delaying development of Idaho crops and causing scattered frost damage, reports the U.S. Agriculture Department and Weather Bureau.

Particularly hit were crops in southcentral and eastern Idaho.

"Frost damage to beets in the south-central area was reported. There also was some frost damage to alfalfa at higher elevations," the agencies reported.

Prunes and sugar beets in the Emmett area were damaged by hail during the week ending May 23.

Aphid infestation in alfalfa was heavy in some areas of southwestern Idaho, the crop report said. Showers proved beneficial to crops in the area, but below normal temperatures delayed growth of beans, corn and other warm season crops. Growth of peas, potatoes and sugar beets was satisfactory in the area.

In northern Idaho growth has been slow for spring planted grain crops. Winter grains are good.

Pea aphids were reported increasing in the south-central Idaho area, particularly around Twin Falls and Burley. The insects also are causing damage to alfalfa. Growth of most crops in the area was slow. Poor stands of some early planted corn caused some replanting.

Stands of spring grain were reported generally good in eastern Idaho, with a few spotty stands. Soil moisture supply is still critically low for some dry farm areas, though a few areas in eastern Idaho received appreciable amounts of much needed rain. Generally rainfall was light in most sectors of the area.

Two, Three Fertilizer Applications Being Used By Texas Cotton Growers

STANTON, TEXAS—Many cotton farmers in this area are now putting down their fertilizer in two or three applications instead of just once before planting. This spring they put on the phosphorus before planting, and are now sidedressing with nitrogen. While this may increase the cost, most farmers say the results in crop growth are more immediate.

Another trend has been toward the use of potash, which is now being used for the second year. The average rate is about 100 lb. per acre for irrigated cotton.

Fertilizer on dryland cotton has been used only sparingly, though farmers who used it in 1958 report slight increases in yield.

Widespread Use of Fertilizer on Grass Predicted by Texan

SINTON, TEXAS — Fertilizing grass may some day become almost as common as applying it to row crops, if field tests are any indicator.

Dr. C. L. Curlee, an authority on fertilizers and soil treatment, ran an experiment on his farm last year by fertilizing Angleton bluestem grass. Clipping results showed that fertilized plots produced 57,030 lb. per acre as compared to 21,280 lb. per acre for unfertilized grass.

He has long maintained that grass will respond to fertilizer and it is a practical way of improving the soil. On the plots tested, Dr. Curlee used several types of fertilizer containing nitrogen, phosphorus and potash. The average cost was about $16.95 per acre. The increase in dry weight of the fertilized grass amounted to over six tons per acre.

He says the use of fertilizer is becoming more widespread each year in the Southeast, and cited one Georgia county where agricultural income increased $3.75 million a year as a result of farmers using fertilizer.

WACA to Sponsor Regional Meetings

SAN JOSE, CAL.—Western Agricultural Chemicals Assn. will sponsor a series of three regional agricultural meetings in California next fall, according to C. O. Barnard, executive secretary.

The first—"New Pesticides Review for Central California"—will take place Sept. 10, at the Fresno Fairgrounds. The meetings will attempt to educate farmers, farm managers and supervisors, pesticides salesmen and others who give pesticidal advice with authoritative facts about new insecticides and new weed killers now in commercial production.

Cooperating agencies will be the California Farm Bureau Federation, the agricultural extension service and the experiment station of the University of California and the California Department of Agriculture. Farm advisors and research and extension specialists will relate usage of the new pesticides either to a major crop, or to a group of the major crops, grown in central California, with emphasis on specificity and alternative treatments to offset insect resistance and other limiting factors. A special presentation by an official of the California Department of Agriculture will be important to every person in the audience.

Colorado Farmers In Full-Scale 'Hopper War

DENVER—State farmers are waging full-scale war against grasshoppers in parts of Morgan, Adams and Weld counties.

Alvin Lesser, Adams County agricultural agent in Brighton, said 100,000 acres in Adams and Weld counties are lined up for aerial spraying to combat hoppers. Some 12,000 acres already have been sprayed.

Chester Fithian, Morgan County agent, said from 10,000 to 12,000 acres had been sprayed in scattered parts of his district. A poison bait machine was to go into operation this week.

None of the farmers have yet taken advantage of the state's pest district organization procedures.

"Too much red tape," one farmer said.

Mr. Lesser said that between 10 and 15 planes are flying daily, weather permitting, on hopper spraying operations. He felt the aerial and bait programs were "getting real good results."

The infested areas were the path of migrating hoppers last fall.

Not Enough Nitrogen Restricts Cotton Output

TIFTON, GA.—Inadequate use of nitrogen is restricting cotton production on many farms in Tift County, according to William H. Pool, county agent.

The agent said that nitrogen always has been one of the first limiting factors in cotton production. He said it is deficient in virgin soils and does not accumulate from fertilizer applications, and therefore, "nitrogen will always remain an important fertilizer problem."

Mr. Pool said the cotton plant must take up about 100 lb. of actual nitrogen per acre to produce the first bale of lint, and each succeeding bale requires about 30 lb. more nitrogen. Therefore, present application rates of nitrogen must be increased where high cotton yields are expected.

Mr. Pool said the general nitrogen recommendation for cotton is 60 lb. per acre, but he added that many farmers in Georgia are using up to 90 lb. of actual nitrogen per acre.

He said these leading cotton farmers are also taking advantage of improved methods of insect control, soil acidity, nematode control, and are adding sufficient phosphate and potash to the soil.

The agent added that "only the cotton farmers who follow the best production practices known, including applications of adequate nitrogen, can hope to surmount the obstacles they face today."

OPEN MIDWEST OFFICE

DAYTON, OHIO — The National Northern Division of American Potash & Chemical Corp. has opened a Midwest area office to be headed by Earl J. White, Jr., at 70 Boundbrook Drive, Dayton, according to an announcement by John A. Haynes, sales manager of the National Northern Division.

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UNIVERSITY PARK, PA. — Hunger is still the world's basic problem, and county agricultural agents hold a key to its solution, Dr. J. T. Thurston, New York, declared at a dinner honoring R. H. McDougall, Butler, Pa., for distinguished service to agriculture.

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THE NEW BOARD of directors for the newly formed South Dakota Fertilizer Assn. Seated, left to right, are Clarence Schladweiler, Madison, chairman, and Wesley Martin, Brookings, secretary-treasurer. Standing, left to right, are Les Hanson, Kransburg; Andy Anderson, Canton; Russell Fortner, Britton; Ole Palmquist, Milbank, and Ralph Ritchey, Nortal, Neb., vice chairman.

SOUTH DAKOTA

(Continued from page 1)

ley Martin, representing the Brookings County Farmers Union, as a three year industry member, is secretary-treasurer.

Ole Palmquist, from the Milbank Central Exchange, is serving a two year dealer term; Ralph Ritchey, representing Phillips Petroleum Co., Omaha, Neb., was elected for a one year industry term; Les Hanson, Hanson Elevator, Kransburg, has a two year dealer term, and Russell Fortner, Farmer's Union Oil Coop, Britton, a one year dealer term. An eighth ex-officio member will be selected from the state college faculty by O. G. Bentley, dean of agriculture. In following elections all members will be elected for three years.

Forty-four members and guests heard B. L. Brage, state college agronomist, stress the value of a fertilizer organization. "Only 30 thousand tons of fertilizer are being used annually in South Dakota at this time," Mr. Brage said. He added, "Both Nebraska and North Dakota are well ahead of us."

The state's nitrogen shortage had been pointed out earlier at the fertilizer short course by Mr. Bentley, when he said: "If we're going to get maximum utilization and maximum efficiency out of the genetic potentials of our crops, we'll have to think about the nutrients that go into that plant." He said that Nebraska is using about 20 times as much nitrogen as South Dakota and North Dakota, twice as much.

Mr. Brage explained that if South Dakota dealers are to approach the sales of the neighboring states, more demonstrations and other sales promotion plans will have to be made to point out the needs for more fertilizer on South Dakota farms. "Such promotion is expensive, but an organization like yours can do it collectively, whereas an individual probably would not be financially able," he said.

The agronomist also said that the organization would serve as a governing body over state fertilizer distribution. Membership in the organization, he said, would demand that dealers follow a definite code of ethics in their business dealings. "Also, an organization of this kind will serve to better promote good relationships between dealers and industry, and between both of these groups and college research and extension men," he remarked.

Dues for annual membership were set at $25 for each dealer voting membership, and $50 for each industry voting membership. Non-voting associate members, such as employees of a fertilizer dealer will be charged $5. In addition, guest memberships were planned to include college and federal employees. Guest members will not be charged dues.

Five fertilizer committees were established, with committee members to be named at the next meeting of the board of directors. The committees were: membership committee; fertilizer use, education, and demonstration committee; fertilizer retail and credit committee; fertilizer equipment committee, and fertilizer research committee.

"Main emphasis is being placed on the membership committee at this time," said Mr. Dodge, "as increasing membership is our main interest now."

Crop Progress Reported Good in California

SACRAMENTO—Harvesting of barley got off to a good start in most of California except northern and mountain counties.

In some sections the crop averaged from one to two tons an acre, a much better average than had been expected in view of prolonged north wind and lack of rainfall. The yield and weight per bushel for irrigated barley are holding up better than anticipated but dryland yields show the effects of the dry year.

Sugar beets in all areas made progress and cool weather provided ideal growth for California's fruit and nut crop. Pest control and dusting were being carried out as required in many orchards. Vegetable and melon crops made good to excellent progress with only minor insect and disease problems encountered thus far.

Virginia Hearing Set on Nematode Quarantine

RICHMOND, VA.—A public hearing on a proposal to quarantine Virginia because of the occurrence there of the soybean cyst nematode will be held in the basement lecture room of the State Library Bldg., 1101 E. Broad St., Richmond, Va., at 10 a.m., July 8, the U.S. Department of Agriculture has announced. First recorded soybean cyst nematode infestations in Virginia were recently discovered by survey crews on 35 farms in Nansemond County.

Interested persons may testify at the hearing, or may submit statements to the director of the plant pest control division, Agricultural Research Service, U.S. Department of Agriculture, Washington 25, D.C., on or before the date of the hearing.

Chile Produces Less Sodium Nitrate in '58

WASHINGTON — Production of sodium nitrate in Chile during the fourth quarter of 1958 was the highest of the year, reported the Business and Defense Services Administration, U.S. Department of Commerce.

Total 1958 output of 1,279,416 metric tons was 3% lower than 1957, however.

Several small producers, using old production methods, were forced to suspend operations during the year.

Two major producers, who accounted for 89% of last year's total, continued to expand and modernize operations.

Exports of Chilean nitrate, which account for more than 90% of the output, were down 6% in 1958 despite heavy fourth-quarter shipments.

The U.S. was the leading destination, accounting for 438,087 tons, or 37% of the total. However, this tonnage represented a 21% decline from the preceding year (556,487 tons or 44% of the total).

Co-op Fertilizer Sales Up 54% in April

KANSAS CITY — The fertilizer sales of Consumers Cooperative Assn. to member co-ops in April totaled $4,246,654. This is an increase of 54% over April of 1958, according to A. H. Stephenson, director of CCA's fertilizer division.

CCA during the month shipped fertilizer from 47 places — the three plants that CCA wholly owns, the three in which it is part owner and 41 others.

Over-all, Mr. Stephenson said, CCA fertilizer volume for the first eight months of the year, September through April, exceeds the total for the previous year.

He said the expansion at the Lawrence, Kansas, plant—to increase ammonia production by 50% and to add urea nitrogen solutions—is set to be completed in September.

Buys Lime Plant

VALLEY SPRINGS, ARK. — McClinton Products, Inc., has purchased the Boone County Agricultural Lime plant here from the heirs of the late Aubrey Hickenbottom. The company manufactures agricultural lime and a line of rock and gravel products. McClinton Products has already assumed operation of the facility.

Anhydrous Use Up; Record Predicted

MEMPHIS, TENN. — Farmers in 1959 apparently are using anhydrous ammonia for fertilizer at rates which will take total consumption of ammonia well past the record 577,000 tons in the fertilizer year which ended June 30, 1958.

Jack F. Criswell, executive vice president of the Agricultural Ammonia Institute, said a cursory survey conducted by his office here indicated virtually every section of the U.S. was using more ammonia this year.

The survey indicated 25 out of 28 ammonia dealers in 17 states believe their business will be larger than last year, with only one believing he would experience a volume reduction and two believing their volume would be about the same as last year. Increased application rates and more acres being fertilized were given by the dealers as their basis for believing their business would be better than last year.

A majority of the dealers answering the survey said both the changed government farm program and the weather were factors in increased sales.

Although Mr. Criswell would not venture an opinion on the size of their volume increases, he said the dealers' estimates of volume gains ranged from 10 to 100%.

Spotted Alfalfa Aphids Attack New Mexico

LAS CRUCES, N.M.—Spotted alfalfa aphids are now threatening more than 400,000 acres of alfalfa in the southern half of the state, according to Dr. John J. Durkin, New Mexico State University agronomist.

Many farmers are controlling the insects with insecticides, but others are not aware that the aphids are doing any damage.

Control methods cost from $1.50 to $3 per acre, depending upon which of three chemicals is used and the amount used.

Researchers at the university are working on resistant strains of alfalfa and with control insects such as Praon palitans, a small wasp that is a natural enemy to the aphid.

Since it spread over the state in 1954, the spotted alfalfa aphid has cost growers $10 million in expense of control and reduced yields.

John M. Hill **H. Allen Sisson** **George S. Rich**

Dow Expands Western Agricultural Sales Staff

MIDLAND, MICH.—To provide better agricultural chemical sales and technical service to its customers in Arizona and the Imperial Valley of California, the Dow Chemical Co. is expanding its sales force by adding a resident salesman in Scottsdale, Ariz.

John M. Hill, who formerly was assigned to the immediate Los Angeles area and to Ventura, Santa Barbara and San Luis Obispo counties in California is now based in Scottsdale.

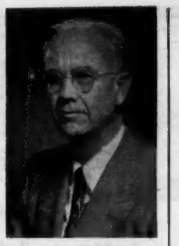
H. Allen Sisson, who was employed within the Dow Los Angeles sales office, will replace Mr. Hill and George S. Rich, formerly with the Los Angeles Chemical Co., will be in the Los Angeles office.

Mr. Hill is a graduate of the University of California with a B.S. degree in agricultural economics in 1951 and he has been with Dow since 1953. Prior to serving three years as an agricultural chemical salesman, he was an industrial chemical salesman for two years in Los Angeles.

A Dow employee since 1943, Mr. Sisson has been in agricultural sales work for 13 years in the company's Philadelphia and Los Angeles offices.

Mr. Rich received a B.S. degree in agriculture from California State Polytechnic College, Pomona, Cal., in 1953. He joined the Los Angeles Chemical Co. as sales representative of agricultural chemicals in the Imperial Valley of California.

Nelson C. White



George W. Moyers

Leonard W. Gopp

David J. Stark

IMC Announces Major Division Realignment

CHICAGO—International Minerals & Chemical Corp. announced a major realignment of its principal product divisions.

The change, effective July 1, consolidates three top divisions into agricultural chemicals division in which fertilizer materials salesmen will sell IMC's full line. Previously each materials division had a separate sales force.

T. M. Ware, president, said the move meets the needs of changing markets and the customer requirements revealed in a full scale IMC survey of the industry.

The new organization combines the potash and phosphate divisions. The phosphate division was set up last fall when the phosphate chemicals and phosphate minerals operations were combined as an interim step.

The reorganization plan establishes new responsibilities for two senior IMC vice presidents.

Nelson C. White, vice president of the potash division, becomes vice president in charge of long-range planning for agricultural chemicals. George W. Moyers, vice president of the phosphate division, becomes vice president and special assistant to the president on agricultural chemicals assignments. He will continue to direct phosphate export sales.

Two new vice presidents in the agricultural chemicals division are Leonard W. Gopp in charge of sales and David J. Stark, operations. Mr. Gopp was formerly general sales manager for IMC phosphate chemicals and Mr. Stark joined IMC from Escambia Chemical Corp., where he was vice president and production manager.

Three sales departments in the agricultural chemicals division will report to Mr. Gopp. They are the feed ingredients department, headed by John K. Westberg; the direct application rock phosphate department, directed by Joseph L. Mealy; and the basic materials department, which consolidates sales of all plant food materials, under E. C. Horne. Mr. Horne came to IMC from Bradley & Baker, where he was general manager in charge of fertilizer sales.

Mr. Horne, with R. E. Linderman as product manager for phosphate and S. B. McCoy as product manager for potash, will direct sales operations through regional managers in New York, Shreveport, La., Indianapolis, Minneapolis and Atlanta. Indianapolis and Minneapolis are new offices established to cover areas previously handled from IMC headquarters.

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This message, "Just which is the best fertilizer?" was printed in Wallaces Farmer on February 21. It compares chemically combined, blended and liquid fertilizers . . . lets the reader determine which is best. Order a supply of these reprints now for your dealers, your customers.

Just which is the best fertilizer?

The day of specialized farming is here! Farming is a business. Like any other business, it will survive only if it makes a profit.

If you're a good hog farmer, you're probably following sound meat-type breeding practices . . . you are using the most modern disease control methods . . . you are investing in modern housing facilities and equipment . . . you are getting maximum production gains through the latest scientific feeding and nutritional practices.

If you're a good dairy farmer, you know that a successful operation requires good breeding, sound management, proper equipment and a balanced feeding program. It just naturally follows that an operation like this pays off in greater milk production, a larger productive life and higher returns over feed costs.

If you're a good cattle raiser, you know that proper feeding is the most essential element in a profitable cattle operation. You're also aware of the importance of good breeding and proper disease control methods. You know when to sell and buy at the best profit margins.

Yes, no matter what type of farming you specialize in, you do the best job you know how . . . simply because you want to make the highest possible return from your efforts.

If you agree that you want to make the most possible money out of your operation, then it stands to reason that you should be following good fertilizer practices. Yes, this indispensable fact still remains — no other investment on your farm pays off better than the use of chemically combined fertilizer, whether it be hogs, dairy cattle, chickens, beef cattle. Proven year in and year out, dry years and wet years, that you can expect anywhere from a $2.00 to $5.00 return for every $1.00 you invest in chemically combined fertilizer. Compare that with livestock feeding where $1.25 to $1.50 is the long-time average return!

Wouldn't it seem sensible, then, to follow a good fertilizer program? Yet, in a recent survey among Corn Belt farmers, almost 50% did not know how to correct a nitrogen or potash deficiency in their soil. An equal number of farmers relied on the advice of their dealers to supply them with the correct grades of fertilizer. If you're still buying "pants" . . . "by the seat of your pants" . . . if you're still asking "what in the heck do the numbers mean?" . . . then you're overlooking the greatest single profit-maker you can use on your farm today!

The first step towards a sound fertilizer program is a soil test. For only $1.50, you can find out what plant foods your soil needs and apply the exact analysis of chemically combined fertilizer best suited to correct the deficiencies.

Why chemically combined fertilizer? To answer that, let's look at all three types of fertilizer, (1) chemically combined (2) blended and (3) liquid.

Chemically combined fertilizer is scientifically formulated so that the granules contain the proper ratio of plant foods your soil needs. Segregation of the different plant foods cannot occur. This is important for uniform growth and maturity. In addition to the three major plant foods, only chemically combined fertilizer contains trace elements in large amounts which recent tests show are so vital to a plant's growth. Chemically combined fertilizer is also available in all the popular analyses recommended by Iowa State College for Iowa soils.

If ever a type of fertilizer was misnamed, it is blended fertilizer. An attempt is made to blend the three separate plant foods into one mixture but this, of course, is impossible since generally each plant food is of a different size and weight. It might be better called "cobbled fertilizer." It's like hauling a wagonload of corn and oats from the mill. Once you're back at the farm, the heavier corn is at the bottom and the oats are on top. The same thing happens with blended fertilizer. Your soil does not get the one, same, uniform application you'd get with chemically combined fertilizer.

Liquid mixed fertilizer also has many disadvantages. First, liquid fertilizer is limited to low analyses. It is made up in grades which do not lend themselves to a direct comparison with dry chemically combined fertilizer. Liquid fertilizer does not have large amounts of secondary and trace elements which come free in dry-chemically combined fertilizer in place of water filler.

There is no storage problem with chemically combined fertilizer. You can order what you want . . . have it delivered when you want . . . and use it when you want, winter, spring or fall, on most land.

Dry chemically combined fertilizer is easy to apply. You need no special rigs or equipment, just a fertilizer spreader or planter attachment. Fertilizers are certain to become more complex, as Iowa soils become older. Plant food nutrients such as sulphur, magnesium, iron, boron and manganese will be needed in greater quantities and can be added to chemically combined fertilizer in the desired amounts. These same plant foods cannot be put in liquid fertilizer in larger quantities. It could be a mistake to take the wrong road when you buy fertilizer equipment.

Yes, the advantages of chemically combined fertilizer are numerous but perhaps the biggest of all is that the analysis is guaranteed. In other words, you are guaranteed by the manufacturer and by Iowa State law that the analysis on the bag is the same analysis in the bin. Dry chemically combined fertilizer is manufactured far in advance of the using season. It is continually under inspection by the Department of Agriculture. The analyses are guaranteed and stay on grade. Liquid fertilizer is generally mixed up and taken to the farm and usually spread chemically combined fertilizer and the same guarantee applies.

Make plans now to set up your fertilizer program. Ask your local fertilizer dealer about getting a soil test. He'll be able to show you or find out how one should be taken. But do it now! It takes anywhere from four to six weeks to get the results. Then you'll know exactly what plant foods your soil needs and which analysis will do the job.

Iowa State Fertilizer Institute • Des Moines, Iowa

Reprinted as appearing in February 21 issue of

WALLACES FARMER

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P. O. BOX 420 DES MOINES, IOWA

Gentlemen:

.... Check enclosed ....Bill me for the following quantity of reprints:

☐ 250 (minimum) @ 12c each

☐ 500	@ 10c each	☐ 10,000	@ 3c each
☐ 1,000	@ 8c each	☐ 25,000	@ 2c each
☐ 2,500	@ 5c each	☐ 50,000	@ 1½c each
☐ 5,000	@ 4c each	☐ 100,000	@ 1¼c each

Croplife®

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Southern states.

Fertilizer Trade's Reputation Threatened By Itinerant Peddlers' Worthless 'Stuff'

EVERY YEAR about this time come stories and warnings about itinerant peddlers, not part of the established plant food industry, who dupe farmers as well as city and suburban homeowners by selling all kinds of phony "soil builders."

This year is no exception. Cries of anguish are being heard from victims in various parts of the country and at the same time the extension services of state experiment stations are trying their best to warn folks against being "taken" by peddlers offering mysterious materials.

In South Dakota, for instance, the experiment station has cautioned farmers against peddlers. "Farmers are led to believe that this material is as good or even superior to regular inorganic fertilizers usually recommended for crop growth," the bulletin points out. "Most of this organic material does not carry a guarantee in respect to the amount of available plant nutrients like the inorganic fertilizers do," the warning continues. "As a result, the little plant nutrient found in this material is usually in such a form that it is not readily available to the plants after it has been applied."

Actually, farmers should be urged to read labels carefully. Products peddled from house to house or from farm to farm with no guarantee label may contain little or no available nitrogen, phosphorus or potash.

Products prepared by the fertilizer industry must by law have on the outside of the bag the percentage of each of these ingredients, which is a protection to the user, certainly, but also to the seller who is kept above any suspicion.

According to Lloyd Davis, assistant extension soils specialist at South Dakota State, results of experimental trials with some of these unmarked organic fertilizers over the past two years, indicate no significant yield increases for small grain or corn when these fertilizers were applied.

"The salesman usually tells farmers that the organic fertilizer will add nitrifying bacteria to their soil along with the fertilizer," Mr. Davis observed. "Actually, it is highly doubtful that any bacteria could be added that would be more beneficial in this respect than those organisms already existing in the soil.

"Farmers are also told that the rock phosphate found in this material is slow to become available, inferring that it should last for a longer period of time. In this respect the peddler is correct, since it is likely that it would take many years for this phosphorus to become available to plant growth."

Many of our readers will recall a specific story of "Muck on a Truck" appearing in Croplife about a year ago. In this case, a housewife was talked into allowing a trucker to put some of his mysterious and magic "compost" on her lawn. Before she could get him stopped, he had run up a bill of $120 which she refused to pay. The bill was then magnanimously reduced to $90 and paid by check.

The lady's husband, being an astute and sensible citizen, realized that she had been taken, and stopped payment on the check. The itinerant salesman then threatened to bring suit and the homeowner sent a sample of the "compost" to an analytical laboratory which gave this analysis of the fertilizer:

Water	**90%**
Mixture of coffee grounds, dried leaves, dirt, and sawdust	**10%**

When the case came to court, the householder was at a disadvantage because the material had not been taken to the laboratory by a policeman or a notary public. However, the judge finally dismissed the case, finding the plaintiff guilty of lack of consideration in allowing the purchasers to believe they were buying fertilizer.

Most cases, however, are not that dramatic. They usually involve three parties: the salesman, the buyer, and then state or city officials who receive complaints about the unsportsmanlike conduct of the peddler.

Actually, a fourth party is involved, too. That is the fertilizer industry itself, which is sometimes condemned by people who can't or at least don't distinguish between the peddler with a truck load of mysterious black stuff, and the salesman representing legitimate fertilizer companies who guarantee the grade and quality of their goods.

Both dealers and manufacturers will do well to remind their constituents to beware of itinerants. At a time when the industry is fast gaining the confidence of the public, it is a considerable setback to the whole trade when worthless stuff is pawned off as "plant food" and word gets around that "fertilizer isn't all it's supposed to be."

Role of Marketing

THE ART of marketing, properly conceived, involves not only getting goods and services distributed, but governing their volume and flow. . . . Marketing is an absolutely basic economic process. There is a tendency toward thinking of producing steel, digging coal, growing wheat or manufacturing automobiles as basic, and to think of the marketing of these things as much more superficial. Any such idea as this is thoroughly obsolete. Successful marketing is the key ingredient of a successful economy of abundance and in the years immediately ahead, marketing will play an even more decisive role in determining our economic success than it has in years past.—Dexter M. Keezer, vice president, McGraw-Hill Publishing Co.

Quote

"Chemical pesticides—used against insects, diseases and other enemies of plants and animals—are necessary in producing practically every food crop or animal. Without them we cannot maintain our agricultural production or ensure the quality of products the public has come to expect.

"It is comforting to know that every possible precaution is being taken to make sure food products do not carry excessive amounts of harmful pesticide residues and that the consumer need not worry about the possibility."—Florida Agricultural Newsletter.

CONGRATULATIONS

Hearty congratulations and best birthday wishes from Croplife to the National Plant Food Institute on the eve of its fourth annual convention at White Sulphur Springs, W.Va. June 14-17. We can think of no other organization that has accomplished so much good for its members, and we are, indeed, proud to be associated with an industry with such top drawer leadership and direction.

SALES POINT

ONE OF THE sales points to be kept in mind in talking with farmers about the economic aspects of chemical weed control is the fact that the cost of farm labor in the U.S. has increased about 400% in the past 25 years. Other production expenses have also spiraled upward.

Even if no other consideration were involved, the labor-saving feature of herbicides would make them worthwhile. The economics of chemical weed control make it a necessity. When a farmer must hire workers to do the job, his margin of profit per bushel, ton, bale, or other unit decreases greatly. Cutting the unit cost of farm production is a major function of all of the chemical products used in agriculture.

Croplife's Home Office

Croplife®

BPA — *Member of Business Publications Audit*

NBP — *Member of National Business Publications*

CROPLIFE is a controlled circulation journal published weekly. Weekly distribution of each issue is made to the fertilizer manufacturers, pesticide formulators and basic chemical manufacturers. In addition, the dealer-distributor-farm adviser segment of the agricultural chemical industry is covered on a regional (crop-area) basis with a mailing schedule which covers consecutively, one each week, four geographic regions (Northeast, South, Midwest and West) of the U.S. with one of four regional dealer issues. To those not eligible for this controlled distribution Croplife subscription rate is $5 for one year ($8 a year outside the U.S.). Single copy price, 25¢.

LAWRENCE A. LONG
Editor

DONALD NETH
Managing Editor

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Nov. 8-10—National Fertilizer Solutions Assn., Annual Convention, Statler Hilton Hotel, St. Louis; Muriel F. Collie, 2217 Tribune Tower, Chicago 11, executive secretary.

Meeting Memos listed above are being listed in this department this week for the first time.

June 14-17—North central branch, American Society of Agronomy, Kansas State University, Manhattan, Kansas.

June 14-17—National Plant Food Institute, Annual Convention, the Greenbrier, White Sulphur Springs, W. Va.

June 15—Northeast Industry Advisory Committee, The Greenbrier, White Sulphur Springs, W. Va.

June 15-18—Western Society of Soil Science, San Diego State College, San Diego, Cal.

June 17-19—Northeast Branch American Society of Agronomy, University of Delaware, Newark, Del.

June 23-25—Pacific Branch, Entomological Society of America, 43rd annual meeting, El Dorado Hotel, Sacramento, Cal. Dr. Leslie M. Smith, University of California, Davis, branch chairman.

June 27—Del-Mar-Va Peninsula Fertilizer Assn., Ocean City, Md.

June 29-30 Fertilizer Industry Conference, University of Illinois, Urbana, Ill.

June 29-30—Seventh Annual California Fertilizer Conference, University of California campus, Davis, Cal. J. H. Nelson and Earl R. Mog, co-chairmen.

July 1—Western Research and Education Committee, El Mirador Hotel, Sacramento, Cal.

July 7-9—Regional Fertilizer Conference, co-sponsored by the Pacific Northwest Plant Food Assn. and state colleges and universities in the area, Winthrop Hotel, Tacoma, Wash.

July 15-17—Southwestern Fertilizer & Grade Meeting, Galvez Hotel, Galveston, Texas.

July 29—Annual Kentucky Fertilizer Conference, Guignol Theater, University of Kentucky campus, Lexington, Ky.

July 31—Agronomy Field Day, University of California, Davis, Cal.

Aug. 3-7—Gordon Research Conference on biochemistry in agriculture, Kimball Union Academy, Meriden, N.H.

Aug. 12-13 — Northeast Fertilizer Safety School, Cornell University, Ithaca, N.Y.

Aug. 18-19—Midwest Fertilizer Safety School, National Safety Council Headquarters, Chicago, Ill.

Aug. 18-19—Annual Alabama Fertilizer Conference, Alabama Polytechnic Institute, Auburn, Ala.

Aug. 18-22—Annual Convention of the Canadian Fertilizer Assn., Bigwin Inn, Lake of Bays, Ontario.

Aug. 26-28—Soil Conservation Society of America, 14th Annual Meeting, Rapid City, S.D.

Aug. 30-Sept. 3—American Institute of Biological Sciences annual meeting, Pennsylvania State University, University Park, Pa.

Sept. 24-25 — Annual North-Eastern Fertilizer Conference, NPFI, Biltmore Hotel, New York, N.Y.

Sept. 30-Oct. 1—Fourth Southeastern Fertilizer Conference, Atlanta Biltmore Hotel, Atlanta, Ga.

Oct. 13-14—Western Agricultural Chemicals Assn., fall meeting, Villa Motel, San Mateo, Cal., C. O. Barnard, executive secretary.

Oct. 14-16—Pacific Northwest Plant Food Assn. Annual Convention, Chinook Hotel, Yakima, Wash.

Oct. 21-23 — National Agricultural Chemicals Assn., 26th annual meeting, French Lick-Sheraton Hotel, French Lick, Ind., Lea S. Hitchner, executive secretary.

Oct. 27—Seventh Annual Grassland Farming Conference, Extension Service, Rutgers University College of Agriculture, New Brunswick, N.J.

Nov. 4-6—Fertilizer Industry Round Table, Mayflower Hotel, Washington, D.C. Dr. Vincent Sauchelli, National Plant Food Institute, chairman.

Nov. 9-11 — California Fertilizer Assn., 36th annual convention, Fairmont Hotel, San Francisco.

Nov. 16-20 — National Aviation Trades Assn., 20th annual convention, New Orleans, La.

Dec. 7-10—Central Canada and North Central Weed Control Conferences, Royal Alexandra Hotel, Winnipeg, Manitoba, Can.

Dec. 9-11—International Crop Protection and Pest Control Exhibition, Seymour Hall, St. Marylebone, London, England.

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Donald J. McCormick

APPOINTED ENGINEER—The appointment of Donald J. McCormick to the position of plant engineer at Calspray's new $4,600,000 fertilizer plant, now under construction at Kennewick, Wash., was announced by Frank J. Juchter, manager of Calspray's manufacturing department. Mr. McCormick will report to Kennewick ahead of plant opening, tentatively scheduled for the fall of this year. In the meantime, he will make his headquarters in the home office at Richmond, Cal. Mr. McCormick comes to Calspray with a long and varied history in electrical supervision. He served as electrical supervisor for Rayonier, Inc., pulp manufacturer of Port Angeles, Wash. for 10 years. Prior to joining Calspray he was electrical superintendent for a newsprint manufacturing company in Cuba.

Classified Ads

Classified advertisements accepted until Tuesday each week for the issue of the following Monday.

Rates: 15¢ per word; minimum charge $2.25. Situations wanted, 10¢ a word; $1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Commercial advertising not accepted in classified advertising department. Display advertising accepted for insertion at minimum rate of $11 per column inch.

All Want Ads cash with order.

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BRUSH AND WEED KILLER

KILL SUBMERSED water weeds which foul up motor propellers, tangle fishing gear and choke irrigation ditches with R-H Granular Weed Rhap. Inexpensive, easy to use, sure results. For details write Reasor-Hill Corporation, Box 36CL, Jacksonville, Ark.

KILL BRUSH at low cost with amazing R-H Brush Rhap. Will not injure grasses, grains, cattle, or other animals. See your dealer, or write Reasor-Hill Corporation, Box 36CL, Jacksonville, Ark.

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WANTED

Sales Executive

Responsible sales position. Challenging opportunity for imaginative, aggressive agri-chemical graduate with experience in chemical sales. Position involves administration and sales with a progressive, fast-growing Midwest manufacturer of liquid fertilizer, insecticides and herbicides. Mail resume in strict confidence to: Ad No. 4928, Croplife, Minneapolis 40, Minn.

SIGNS NEW LAW

DENVER, COLO.—Gov. Steve McNichols has signed into Colorado law House Bill 336 permitting formation of districts to control or eradicate noxious weeds, insect pests and plant diseases.

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THESE MEN HAVE LEARNED FROM EXPERIENCE THAT TOXAPHENE MAKES DOLLARS...AND SENSE

Hartford Jackson, Columbia, La. "*I set about the best cotton crop I have ever seen, following the toxaphene, toxaphene-DDT control program . . .*"

P. E. Cloutier, Bermuda, La. "*We set one of our best crops last year, and we think the toxaphene, toxaphene-DDT insect control program was a big factor. We're basing our 1959 program on the same plan . . .*"

D. L. Hall, Eudora, Ark. "*The toxaphene and toxaphene-DDT control program certainly worked for me, and made me money . . .*"

Morris A. Roberson, Gilliam, La. "*I like the early production and early harvest that comes with the toxaphene insect control program. We had good control all season, and I plan to use the same program this year . . .*"

W. E. Moore, Sherrill, Ark. "*We were able to pick cotton two weeks earlier on the acreage where we followed this program. It really paid off for us . . .*"

Clarence R. Smith, Cleveland, Miss. "*We believe in this program. It gave us excellent insect control, saved us money, and helped us make a cotton crop under adverse conditions . . .*"

H. C. Bradney, Montrose, Ark. "*This program saves me expensive late-season applications and does an excellent job. Last year I cut my insect control costs in half . . .*"

O. L. Garmon, Jr., Marks, Miss. "*I used the toxaphene program on more than 700 acres of cotton. I know you need to get the overwintered boll weevil, and this program does that. I had good insect control all year . . .*"

O. L. Cox, Ruleville, Miss. "*I got on the toxaphene program early in the season and continued on a regular schedule. I believe those six early applications paid more dividends than anything we did with our cotton crop all year long . . .*"

Insecticide salesmen have to do more than just take orders for dusts and sprays. In the Mid-South, for example, progressive formulators and dealers are showing cotton farmers how a planned, season-long insect control program based on toxaphene can be the most satisfactory—and profitable—practice. These statements from farmers already following such a program reflect the growing interest in more effective use of insecticides.

TOXAPHENE

A product of the Agricultural Chemicals Division
HERCULES POWDER COMPANY
INCORPORATED
900 Market Street, Wilmington 99, Delaware